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ADDRESS OF THE PRESIDENT.*

ALBERT L. BRITTIN, M. D.,

ATHENS, ILL.

Fellow Officers and Members of the State Medical Society: My first duty is to thank you for the privilege of appearing before you and having the opportunity of addressing you on the important practical problems that are facing the medical profession today. I look upon this as the most important session of our annual meeting, for I cannot too strongly emphasize the fact of the importance of the county medical society as the fundamental unit of our entire organization, and the paramount importance of the county secretaries as the prime forces of the county medical society. We know the importance of the cell in the structure and functioning of the organic body. Well, the county medical society is the basic cell in the structure of the organized medical profession; and as pathologists, we know that the health of the body depends on and is governed by the condition of its fundamental unit cells. How important, therefore, it is that every question affecting the mind of the organized medicine today should be thoroughly appreciated and understood in all its bearings by the individual county societies, I need not labor to bring home to you; nor need I dwell upon the importance of bringing those questions directly before the assembled body of secretaries because to them must their individual members look for light and leading; on them must ultimately depend homogeneity in ideals, earnestness and enthusiasm in work; and through them must be achieved co-ordinated action and that unity of purpose which commands and obtains success.

And right here at the very beginning let me sound the optimistic note, for I am optimistic in all things regarding the profession. When I take a general survey of what has been done and what is being done, both for the progress of scientific medicine and for the betterment of the individual members of the profession, I can see only reasons for congratulation. Obstacles there are yet, indeed, and some dark spots to efface; but it is only by surmounting difficulties that we thrive and we cannot hope to reach the heights of Parnassus without stumbling over jagged rocks on the way. Some of these difficult spots I shall take the opportunity of bringing before you today, and not only that you may become familiar with them but in order that you may see that they are not such as cannot be overcome by sturdy men who work with a will and a purpose.

The first question which should occupy the foremost place in the estimation of every county secretary is the importance of his county medical society as the unit which binds him and his fellow members in the chain of organization. The chain is just as strong as its weakest link and at that spot it will snap when the strain is on it. Now, if the county societies are not strong in membership, strong in their allegiance to common principles and strong in their determination to meet and overcome difficulties, no amount of strength in the State and National organizations will suffice to hold the chain together. It is the prime duty of every secretary to see to it that every regular member of the profession in his county is a member of the county medical society. Every effort must be made to bring this about, and not only make him a member, but a member with a purpose; an active, live member who will be interested in the honor of his society and in seeing to it that it does not lag.

Organization and unity is not urged merely in the interest of the profession itself. Its value is clearly admitted for the better fulfillment of the duties and relations of the profession and the

*Delivered at the Secretaries' Conference, May 18, 1915.

public and for the accomplishment of the high aims in the progress of scientific medicine. In another address I have shown that it is the duty of our profession to be the torch-bearers in leading the people to a knowledge and appreciation of the scientific facts underlying personal health and industrial sanitation and in no way can we attain the prestige that will insure the respect and co-operation of the people better than by showing them an organized profession with clear conceptions as to its mission and unity of purpose for its achievement.

I do not think that I need dwell then at greater length on the necessity for a strong and united county medical society.

But when you have got your members, how are you to keep them interested? I know very well that it is difficult. It is hard for the tired doctor to attend and it is incessant and often thankless work for a secretary to endeavor to get his members to attend meetings and interest them. One of our esteemed State officers has suggested the value of the social element in the county meetings. He instanced how successful one secretary was who invited the members to meet socially at his home. These meetings were more or less informal but were largely attended and the habit of meeting at the homes of the members became contagious and they were always largely attended, and with consequent interesting discussion.

I may also suggest the invitation of some prominent men from our own or a neighboring State. Such men like to be thus complimented and usually comply and make an interesting meeting.

On the discussion of topics interesting to the public generally, particularly public health matters, prominent laymen should be invited and asked to join in the discussion.

The secretary most particularly should keep himself informed of new developments in medicine and suggest the topics either for discussion or as the basis of a paper. In this regard he should urge his members to write papers not only for the county meeting but for the State annual meeting and he should personally see that the members who have undertaken such should make these papers worthy of their society and of themselves, not merely a rehash of a textbook. The secretary should be competent to advise how such papers should be prepared and be at all times ready to give such advice and help, and such interest will be appreciated by the members.

As regard the official duties of the secretary, stress must be laid on the necessity of keeping the State secretary informed as to the correct names of all county officers and committees and also of the movements of members away from his county. These are small matters but are important.

Now, the proper execution of these and other duties which fall to a secretary's lot requires time and work and no man should undertake the office who has not prepared to give both. The success of the profession in each county depends on the thoroughness of the secretary's work and it is dishonest as well as dishonorable for any man to take up this arduous position and then shirk his duties.

These are several important questions which you will be expected to ventilate before your members and get expression of their opinion. Of these, perhaps, the most important is that of "Medical Defense." To the individual member medical defense is, perhaps, the greatest benefit which connection with the State organization confers, and I venture to say that as time goes on it will become even more important than in the past, owing to the peculiar relations of the doctor under the Workmen's Compensation Acts and similar new departures. The existing procedure in this regard is far from satisfactory and it is very desirable that a fixed and uniform method of referring all cases through the county society medico-legal committee to the State secretary in the first instance be adopted. It is, of course, a matter for the State society to adequately insure all its members. I think it is obvious that the State officials would be in a better position to handle such matter more economically and more judicially than if left to the local practitioner's choice of his legal advisors with the subsequent dispute over fees.

A matter which has greatly agitated the minds of the profession in this and other States is the relation of the physician to the Workmen's Compensation Act. Now it appears to me that somewhat wrong conceptions and hasty conclusions have been made regarding this. The two most important facts affecting the profession is the

scale of fees for medical service and the right of the patient to appoint his own physician.

As regards the first it should be pointed out that it is not clear that government or anyone else can arbitrarily fix medical fees, or that a physician is bound to give his services in such cases for such fees. The clause in the Act providing for the regulation of fees appears to me to have been drawn not as discriminating against the doctor but to prevent undue amounts being claimed either by employes or employers from insurance companies on the score of medical services. But the phraseology of the clause basing the compensation to the physician on the social condition of the patient rather than on the value of the service rendered is to my mind objectionable and should be remedied.

The right of the patient to select his medical attendant is a matter to be insisted on. The onus of providing medical assistance is on the employer, who has passed it on to the insurance companies. They will undoubtedly restrict the choice to their own nominees if they are permitted to do so.

As obviating these more or less disadvantageous aspects, there are several viewpoints of advantage to the profession. First, if the fees paid are on a minimum scale, yet their payment is assured. The government acts as a collecting agency for the collection of such fees and formerly in many such cases the physician got nothing or was even out of pocket. Considering the magnitude of the industrial activities of the country and the large number of cases, this is no small advantage. Certain and prompt payment in every case is worth more to the profession at large than higher fees collected only in a percentage of cases.

Again, the fact that a workman's savings are not spent in medical assistance in case of accidents warrants him in being able to pay for medical assistance when necessary for other members of his family, which, as we well know, was not always the case.

The third advantage lies in the fact that neither government nor insurance companies, acting for employers, can make this Act a success without full co-operation of the medical profession. It was not, as I have said, the intention of the government either to be detrimental or beneficial to the interests of the profession in putting this Act in force. I believe that on the whole it is advantageous to the profession and it is clear at least to my mind that by organized and united effort the profession can and will succeed in abrogating any features that can reasonably be shown as derogatory to its dignity and interest. County medical societies throughout the State should, through their medico-legal committee, lay down the condition for the application of the Act to their counties and should firmly insist as a matter of ethics on their members observing them. A stand for what is right and just will always have the support of the people; and it must be remembered that in the last analysis the cost of medical insurance is included in the cost of the industrial product and falls on the consumer and not on the manufacturer. The people are entitled under circumstances to the best care and treatment, and it should be made clear to them that they cannot expect that, and are being cheated out of, their legal right if a niggardly spirit is displayed toward the profession and rock-bottom fees tendered by interested middlemen. The profession is standing on its own rights when clearly championing the rights of the people.

Much of these remarks are applicable also to the question of

CONTRACT AND LODGE PRACTICE.

Perhaps the most important matter before the profession today is this question of contract and lodge practice. It is certainly a most humiliating and degrading condition that qualified members of this noble profession should resort to wire-pulling and subterfuge and undervalue themselves to the extent that they offer their services for a miserable few dollars per capita yearly. Yet such is the case not only in this state but elsewhere.

In seeking a remedy for a state of affairs which is admittedly most unsatisfactory we must, however, try to consider it dispassionately. We must look at it from both sides, from the profession side and from the public side. From the profession's point of view we see that the condition is largely due to our internal economics. The fact is that in the United States the medical profession is and has been overcrowded. We have here one doctor to every five hundred of population, whereas in Germany for example the proportion is one to every two thousand. The

low contract rate practice is primarily the result of necessity on the part of our young men who find the cost of living high and the building of a practice slow under existing conditions.

From the public viewpoint the question is also an economic one. Lodge and contract practice is the natural growth of the necessity which a large section of the public find of insuring itself against the cost of sickness and medical attendance.

It is a fact in our present day mode of living that in most families that are not paupers although medical service is and ought to be the first necessity, it is treated as a luxury and no provision is made for it. They depend either on the free clinics or dispensary or on such medical benefit as can be obtained by virtue of a membership in a lodge or benefit society. Now we have to face the fact that this principle is accepted by a large section of the public and that it is here to stay and we must deal with things as they are.

From the public viewpoint, as I said in concrowding are being gradually eliminated. It is a hopeful sign that in 1912 there were 800 physicians fewer than in 1900 in the United States and 35 fewer medical schools and colleges than a decade ago. The gradual closing of disreputable schools and the raising of standards will in time, acting simultaneously with the rapidly increasing population, bring about employment for all qualified members of the profession.

From the public viewpoint as I said in connection with the Workmen's Compensation Act, the people are entitled to the best and I believe that they are honestly desirous of paying a fair price for service. When they are educated to see that they are the principal losers in being the recipients of inefficient service their own interests will force them to see that proper service can only be obtained by proper remuneration.

Fulminating against our professional brethren who are forced into a disreputable position will do little good. We must educate our students and younger members and show them that such practice is most detrimental to the ideals of a high and noble profession and that they are handicapping themselves in the eyes of the public by undervaluing their service. What respect can the public have for the services of a professional man who himself values his services to a whole family at a few dollars per twelvemonth?

Each county medical society should have a committee on medical economics, which should decide the minimum fees for contract practice in every case and regulate all matters in dispute. They should educate the people on the value of medical service and their own members on the importance of strict adherence to their regulations. Departure from such standards by any member should be strictly dealt with and censured. As a matter in point I quote the following from the *Buffalo Express* of January 18, 1914, as regards Niagara County, New York:

> The Twin City Academy of Medicine has made arrangements whereby no physician in the Tonowandas will accept contract work with any local manufacturing plants or fraternal organizations at any other than regular family rate. Heretofore contracts were made at a very low rate.

This is the principle on which we in this state should work and I hope that every secretary present will bear this message home to his own county medical society.

The measure of your success in the questions to which I have alluded will be gauged by the strength of your membership and their solid unity of opinion. The ideal to which every county medical society should look forward is the enrollment in it of every ethical physician in the county. The time is ripe and occasion demands that differences which have resulted in nothing more than a weakening of our professional dignity and standing should be leveled and the county medical society platform made broad enough to admit all honorable ethical practitioners who have fulfilled the state requirements no matter to what school they belong. I think such a reunion would be welcomed; and that it would have advantages for all concerned may I venture to say might be admitted. After all, there is but one common purpose and around that one central thought all minor differences vanish. And for further common purpose that all practitioners should have of being able to do their great work under the best possible circumstances for themselves and for those they serve it is most expedient and desirable that they form one compact united body.

It is freely admitted that it is only because as a profession we are disunited and pulling different ways that practices and legislation detrimental to our interests have become effective. A united profession would command the respect

and support of the public and the representatives of the public. The expression of opinion from a united profession would carry authority with it and I venture to say that no legislature would dare to disregard it or to force legislation which such opinion would state to be inimical to its own usefulness in serving the people or calculated to be detrimental to the public health.

And that this unity and the force behind it is necessary there can be little doubt, since we have evidence that there is a tendency to meddlesome and ill-digested legislation, on matters in which the profession is vitally interested, without due recognition of the right of the profession to have its voice heard before such enactments are put in force. The remedy is organization—strong organization—and the instillation into the public mind that public interests and professional interests are identical. Both legislators and the people they represent must be shown that our requests are reasonable and based primarily on our solicitude for the public good. When we show that we have no selfish interests to push them, common sense and prudence will do the rest.

The watching of meddlesome legislation, no matter of what kind, is more a matter of the national and state associations than for the county medical society, but nevertheless every individual practitioner should be alive to it and ready to lend his assistance and support.

And in furthering this point of view it is most desirable that the physicians of every county should take a direct interest in the education of the people in public health questions and matters affecting social betterment. Preventive medicine has so many ramifications and so much depends on the co-operation of the people that it is necessary that they should be kept fully informed on it. While at all times legislation on public health should be the demand of the people, yet the position should be that the people would naturally look to the profession for light and leading regarding it. Co-operation then with laymen by public lectures and any other desirable means should be the rule of the profession in every county. The secretary of every component society should be a member of the public health section of the Illinois State Medical Society.

The state society may be trusted with the duty of looking after medical quackery and the attempt of unqualified persons to practice the art of medicine; but all such activities in any county should be watched and duly reported.

I have now exhausted the topics to which I wished to draw particular atention.

To summarize:

Let your first endeavors be to make your individual societies as strong as possible.

Keep your members interested in the work and aims of organized medicine in the progress of medical science and in the development of a bond of common interest and fraternalism between ourselves and all other duly organized medical societies. Do this by more frequent social intercourse—by invitation of members of other societies to lecture before you and any other means compatible with the end in view.

Raise the standards of the papers read at your meetings. Let the contributions of your members to the JOURNAL be conspicuous for their excellence.

Be careful to comply in full with your official duties in connection with the state society.

Show your members the importance and necessity of a uniform method of dealing with the questions arising out of medical defense, and all questions in which legal action against a member or by a member is threatened.

Organize within your society a committee to deal with and regulate the conditions for contract and lodge practice.

Cut loose from factionalism and medical sectarianism—open your doors and welcome as members all ethical physicians no matter to what school they belong if they are only licensed by the state to practice medicine.

Interest your members and your society to join hands with the public in all social questions—particularly public health questions—and to see to it that the public get right ideas as regards the attitude of the profession towards the public welfare. Let your slogan be "Unity," Unity for the good of the People and Unity for the good of the Profession.

In conclusion I will say as I said in the beginning that I am optimistic in everything regarding the profession. I foresee that what appears dark will pass away. I think the profession stands today on a higher plane of dignity and progress than at any time in its history. The future seems to me to be full of brightness and I wish that every member may take this same

optimistic view. As someone has said, the world is like a mirror. Smile at it and it will smile back at you—frown and the frown will be returned. Let us therefore smile at our fellowmen. Let us show them that we trust and honor them. And thus we shall retain for ourselves honor, trust and esteem.

Fellow officers, I thank you for the courtesy of your attention.

THE MAKING OF A MILK COMMISSION*

J. W. VANDERSLICE, M. D.
Assistant Professor Medicine, Rush College; Secretary Chicago Medical Society Milk Commission.
OAK PARK, ILL.

Certified milk has now reached a point in its development at which it is no longer considered solely as a clinical milk but rather as a commercial commodity, which by its utility has gained for it the high plane of regard in which it is now held by the profession and laity.

Certified milk was first produced under the certification of the Essex County, N. J., Medical Milk Commission in 1890, Dr. Henry L. Coit being the originator and indefatigable promoter.

The vision of Dr. Coit and his co-workers in the field of a clean, pure milk, was sufficiently broad to embrace the ever widening scope of this work; this is manifest by the comprehensive contract first entered into between the producer and the commission; this contract with but minor changes is accepted as the working standards of all medical milk commissions.

The propaganda for clean milk, which crystallized in the certified milk movement, was the pioneer of the infant welfare organizations and there is a connecting link in most of the milk commissions with the infant welfare societies.

The conception of certified milk embraces not only the production of a clinical milk but the broader view of encouragement of the production of a better milk supply for the community at large. The educational effect of certified milk production is proportionately of far greater value to the community than the supplying of the very limited amount of certified milk and this aspect of the work by the commission should be ever borne in mind. It is a matter of current knowledge that in farming communities, where certified milk is being produced upon one or more farms, there is a tendency to clean up upon many of the adjacent farms and there is the factor of imitation to a greater or lesser degree, both as to methods and equipment throughout that vicinity. In the Chicago district, where there are upward of a dozen certified milk producing plants, there is being spread the gospel of pure clean milk in a practical way to practical men.

The education of the medical profession to the value of a clinical milk is of no inconsiderable importance and when one considers the apathy with which the milk supply for the unfortunate baby, deprived of its natural aliment is so frequently considered, this demand for education of physicians who prescribe the feeding for these unfortunates is paramount.

Milk is milk, and to the house-wife the cream line is the gauge by which all qualities are measured. However, the possibility, yes, the practicability of the distribution of a safe, clean, wholesome milk, is gradually sifting into the minds of these housewives, and today in many communities there arises a demand for such a milk long before either the profession or commercial enterprise is prepared to supply a milk of certified grade.

Of no mean importance is the value of the milk commission to public health work. The stimulation of an active energetic milk commission upon the health officers of a community is indeed wholesome.

Certified milk is milk produced under the certification of a regularly appointed milk commission of a county medical society. This definition for this product has many advantages over a definition which embraces the working methods and standards of the A. A. of M. M. C. These methods and standards are subject to change from time to time as the knowledge of milk hygiene increases. Furthermore, from a protective point of view, this definition meets the conditions to the best advantage. In many states certified milk has received legal recognition by the enactment of laws by the several legislatures. The charter of the state of Illinois is such that the best legal advice which the Chicago Medical Society Milk Commission could obtain, gave as their opinion that any statute that would stand the test of law would be more harmful than beneficial to the cause; as the law governing such products declared that one could not go

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

behind the container; milk must have standards, which apply only to the milk as delivered in the bottle or can. This product can only be protected under the laws appertaining to misbranding and the copyright laws.

The originators of certified milk contemplating this aspect had the term copyrighted under the ownership of the producer of certified milk to the Essex County Commission. By consent such copyright is extended to any regularly constituted milk commission. The value of this copyright has never been decided by a higher court, but it is of common accord believed to be entirely valueless. In the face of such conditions, the attorney for the Chicago Medical Society Milk Commission advised that the commission have an original design drawn and that a copyright of such be taken out and to secure further protection to have said meaningless design registered under the registration and trade-mark acts of Illinois and Wisconsin. Accordingly this was done. All the literature, bottle caps, etc., bear this insignia, so that today the public is educated to demand a bottle sealed with this label when purchasing certified milk.

Under the misbranding laws several courts of record have decided that certified milk had by usage become known and accepted as a milk for clinical purposes produced under the direction and supervision of a county medical society. The Chicago Medical Society Milk Commission is of the opinion that this is a better protection than any legal procedure could be even were it possible to have certified milk given a legal status by act of the legislature.

Certified milk is extra-legal. For it to remain in the high regard in which it is now held, it must always be in advance of legal ordinance.

There are but three milk commissions in Illinois and approximately seventy-five in the United States. In many communities there is developing a demand for a milk of the grade of certified. Where there is such a demand it is the duty of the county medical society to have such a milk furnished that the many babies, who of necessity, must be given artificial food, may have a clean, wholesome milk. In the development of such a demand there is of necessity a slow growth and in many cities and larger towns the production of a certified milk for a small growing demand would be at a considerable financial loss. It would appear that this early loss to a very large extent could be obviated by temporarily receiving their supply from a neighboring commission. There are few places in which it would not be possible to deliver certified milk within twenty-four hours after milking.

In the establishment of a milk commission there should be a canvass made of the various charitable and uplift agencies to work up an atmosphere for such a propaganda. The many women's clubs welcome speakers upon this subject. The county medical society should establish a milk commission as one of its standing committees. The charter of the Chicago Medical Society Commission as expressed in the by-laws of that organization, is:

SECTION 7.—The Milk Commission, which shall be known as the Chicago Medical Society Milk Commission, shall be composed of seven members, the president of the Chicago Medical Society *ex-officio*, and six members, whose terms of office shall be three years, two to be elected annually by the council of the Chicago Medical Society to serve three years. At the annual meeting of the council in 1909 six members shall be chosen, two for a term of one year, two for a term of two years and two for a term of three years. The principal object of the commission shall be to secure a supply of pure and clean milk that can be relied upon for the feeding of infants and invalids, and for this purpose the commission shall certify to milk from any dairy which applies for certification when the milk is produced in accordance with the conditions imposed and equals the required standard. Intimately connected with this object is the dissemination of knowledge concerning the hygienic importance of a wholesome milk supply. To promote these objects the commission shall co-operate with the American Association of Medical Milk Commissions, and shall organize and make such rules for its guidance as may be necessary. It shall provide such stoppers, seals or labels as may be required to indicate and protect its certification. Besides the inspection of dairies and the examination of the milk produced, it shall take whatever other means may be necessary to promote its objects. It shall not contract any financial obligations without the consent of the trustees of the society, and its work shall be self-sustaining.

The number comprising the various commissions throughout the country varies from three to more than a hundred. The number should not be so great as to divide the burden infinitesimally nor should it be so small that the duties become too irksome.

Six is a good number. This allows for the appointing of the several committees, thus appor-

tioning each branch of the work to a special committee.

In the selection of the members of the commission two aspects should be borne in mind; one in having selected men of sufficient reputation in this especial field, who by their standing, will bring confidence and knowledge to the commission; also, there should be younger men who are willing to sacrifice their time and energy to furthering the interests of the commission.

The commission having been appointed by the county medical society, the commission should meet and effect an organization by the election of a chairman, secretary, treasurer and the following committees: sanitary inspection, veterinary inspection and tuberculin testing, bacterial and chemical examinations, medical inspection of dairy employes.

There should be appointed certain experts as consultants to the commission: consulting attorney, veterinarian, chemist, bacteriologist, sanitary expert.

In accepting the dairyman who offers to fulfill the requirements in the production of a certified milk, his individual fitness must be measured by certain standards. His integrity must be unquestioned; he must have sufficient intelligence with a vision which comprehends certified milk; he must be in sympathy with the production of a clinical milk and not have the milk industry secondary to other interests as the breeding of pure breds or the financial return; he must be clean in person, so inspiring cleanliness and respect in his employes.

In return for the demands of the milk commission he receives an increased price for his product and the support of the medical profession in marketing this commodity.

The duties of the commission are to enforce regulations of production and distribution; to make personal sanitary inspections; to provide competent sanitary and health inspectors; capable bacteriologists and chemists; qualified veterinarians; and to spread the gospel of certified milk.

Details of the administration embrace a regular meeting of the commission at a definite time and place at least once each month. A small proportion of the commission should constitute a quorum as the duties of a physician are such as to materially interfere with regular attendance.

The order of business should be, reading minutes of last meeting, report of secretary, report of treasurer, reports of committees. All reports should be made in writing and permanent files kept. There should be a sheet which gives the dates and records of each bacterial and chemical examination, each sanitary, veterinary, and health of employe inspection, also the tuberculin testing and water analysis of the individual farm. By so doing a glance at the sheet will disclose any delinquency in any of the departments.

It is of extreme importance that the production of certified milk be under the direction and supervision of the milk commission and no condition should be tolerated that could be interpreted into the assumption of an opposite condition of affairs. The commission must be judicial as well as educational. The commission must be in absolute control of all inspectors. It must not be possible for any question to arise as to who is the employer the commission or producer. All examiners, inspectors, veterinarians, etc., must be paid by the commission rather than the producer.

How shall the money to pay these expenses be assessed? Shall it be by a per bottle tax or by the simple spreading of the expenses on the farms? The Chicago Medical Society Milk Commission charges to each farm where practical the individual expense. This can easily be done for sanitary and veterinary inspections, also the chemical and bacteriological examinations. There are many other expenses as the general expense of administration, etc., which must be prorated. This is done on a per farm basis. It can readily be seen that this makes an unfair proportion to the small producer. Many commissions make a per bottle tax by selling the labels and caps at an advanced price to the producer. This is an equitable method and allows of no comment on the part of the producer as to the manner or price paid for the various activities.

The average cost of certification ranges from one-fifth of a cent to one cent per quart in the different commissions. With a commission producing approximately ten thousand quarts of certified milk per day as is done by the Chicago Medical Society Milk Commission, the per quart cost can readily be done at a low price.

Some commissions accept the work of city health officers for more or less of the details. The advisability of such procedure must be decided

according to the conditions in the municipality concerned. In a large city such a policy would be extremely hazardous.

The commission should become a member of the American Association of Medical Milk Commissions and should have for their contracts with the producers the working methods and standards of that association.

The working methods and standards are not definitely set rules mandatory upon all commissions but are the high standards toward which all commissions are striving for the production of certified milk under their certification.

These standards are made for the large and the small farms and in them will be found certain recommendations which the cost makes prohibitory to the small producer, but the essentials can and should be required of all producers. The Chicago Medical Society Milk Commission has these working methods and standards printed in contract form and such contracts in force at all farms under its jurisdiction.

The commission does not set the price for which this milk is sold, but the price must be such as to meet the approval of the commission if success is to be attained.

The Chicago Medical Society Milk Commission believes that the perpetuation of the certified milk industry demands that it be upon a commercial basis. There may be many men, with the zeal of new converts, who may agree to make such a product, but if the continuance of production entails a constant loss without hope in an ultimate financial return, the industry cannot attain that solidarity necessary for permanence.

In fixing the price three interests must be considered. First, the producer, who should have sufficient return over and above the price received for ordinary milk, to offset the extraordinary expense required for the production of certified milk; this including the wages of extra employes, more and better utensils, an overhead covering the interest on a greater investment in stock and equipment and cows removed from the milking herd by order of the commission's veterinarian. Second, the distributor is entitled to a greater spread between the cost and selling price than in commercial milk to cover the extra care demanded for the handling of the certified product. Third, the consumer is entitled to consideration because the price bears a definite relationship to the saleability of a product. Certified milk is considered in the class of philanthropies and the need of the infant must ever be a controlling factor. Milk is milk and as the laity has been educated to measure milk by the cream line, this extraordinary care and safety of the product are factors which are seldom given the consideration to which they are entitled.

The retail price of certified milk in the Chicago district is fifteen cents a quart.

The value of certified milk includes the object lesson of the production of a clean, safe, raw cow's milk at a cost within the reach of all. When this most excellent product is contrasted in cost with the exceptional productions of other foodstuffs, the comparison is all to the advantage of certified milk. All have seen the examples of the fruit growers' art in the display windows at prices far beyond the ability of the ordinary purchaser to pay; even in meats the difference in price between the inferior and superior cuts is greater than in milk. Certified milk is pre-eminently an infant and invalid food—a dependable food for the feeding of persons with delicate digestive apparatus.

The certified milk industry is entirely a voluntary organization from commission to consumer. The value lies not alone in the number of quarts sold per day nor the number of infants fed, but in the educational influence spread broadcast. It is the entering wedge in the pure food movement. It has demonstrated its ability to make good. It has raised the grade of all milks far above the fondest hopes of its originators.

The propaganda for certified milk: It is a special milk for a special purpose. It does not compete with market milk. In furthering the use of certified milk there is and should not be any attempt at climbing up by the pulling down of the commercial product. Certified milk sells itself by its own excellence and superiority.

The objects of the commission are: to produce a clean safe raw cow's milk for clinical purposes; to stimulate the clean milk movement; to educate the profession and laity to the advantages of their product.

The medical profession should support and encourage the milk commissions by recommending their product wherever milk is used as a beverage.

The milk commission should readily furnish the medical profession at all times full information of any and all details in the production and distribution of its product.

Certified milk is a dependable article of diet; it is the highest grade of milk possible to obtain. Certified milk is surrounded by all the safeguards practical to the production of a milk at a price within the reach of the majority.

MEDICAL INSPECTION OF EMPLOYES ON CERTIFIED FARMS.*

GRACE H. CAMPBELL, M. D.,
CHICAGO, ILL.
Chicago Medical Society Milk Commission.

Within the last few years increasing attention is being given to milk and its relation to public health. Milk is used to a greater extent in this, than any other country. It is one of the most important articles of food. About 16 per cent of the average American diet consists of milk or milk products. Milk contains all the essentials of a perfect diet. Because of this and its facility of ingestion and being so easily digested it is one of the most important foods for infants and invalids. Milk is of great importance as a substitute for mother's milk in infant feeding; it is well understood that those most dependent on milk as their sole food constitute that part of the community which suffers the greatest injury from use of milk impaired of its nutritive content. Improved living conditions have greatly decreased the mortality in most countries; unfortunately, however, this does not apply to infants under one year of age. It is for this reason and many others that the question of a clean, safe milk and its relation to public health is worthy of best efforts.

That milk may play a part in the spread of certain diseases has for many years been appreciated. From present knowledge the most important of these are, tuberculosis, typhoid fever, scarlet fever, diphtheria and tonsilitis. It is believed by many that the tubercle bacilli are in a majority of cases derived from the cow, others believe that they may come from human sources. Typhoid bacilli in milk are always derived from human sources. The contagion of true scarlet fever is believed by some to be transmitted through milk and considered as always coming from man. Diphtheria bacilli when found in milk are regarded as being of human origin.

The streptococci exciting tonsillitis are thought to be derived both from cases of septic inflammation of the udder of the cow, and from human sources.

Physicians recognizing the dangers in the contamination of milk and the great need that it should always be clean and wholesome, have organized medical milk commissions in most of the larger cities of the United States. There are many requirements to be met by the owner of each farm in the production of certified milk. One of the most important of these requirements is the medical inspection of all employes. Of the eighty-one requirements of the contract between the producer and the commission, nine are in regard to health of employes, but these nine items are only a small part of the amount of work that is being done to further safeguard certified milk.

To the late Dr. Julia D. Merrill, who was a member of the Chicago Medical Society Milk Commission for six years and was a member at the time of her death one year ago, belongs the credit of having established and enforced medical inspection of all employes upon all farms under certification by the Chicago Medical Society Milk Commission.

Strict medical inspection of employes on certified farms was put into force in November, 1912, and since then every employe on each farm who comes in contact with cow, or milk or utensils has been medically examined at least once a month, except this last winter when the epidemic of foot and mouth disease prevented regular examinations. During this epidemic all certified farms were under rigid quarantine. During these months of the quarantine of the farms postal card reports were made regularly by each producer to the commission, as to the health of all employes and of the existence of contagious diseases, if there were any, in the neighborhood of each farm.

Several months ago the work of medical supervision of employes on certified farms was extended to include a complete physical examination of each new applicant for employment on certified farms.

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

In the locality of each certified farm a reputable practicing physician has been appointed by the commission to examine all new applicants. Every new applicant is questioned as to having had any recent illness or having had diphtheria, typhoid fever, or frequent tonsillitis. No person is employed who has not been vaccinated. It is ascertained whether the applicant has been in contact with any persons suffering with any disease and whether it was contagious. Each must be examined for any disease of the eyes and of the skin of the face, neck, arms, hands, and the condition of the finger nails. A careful physical examination is made for signs or symptoms of tuberculosis, either pulmonary or glandular. No one who upon examination is found to have a sore throat or to show signs of conjunctivitis, tuberculosis, syphilis or venereal disease, any suppurative process, or other diseases of an infectious or contagious character is considered for employment.

A card index of every employe on each farm is kept; the points recorded include twenty-seven questions and answers and the findings of the primary physical examination. A separate card index is kept of the medical examinations which are made each month. There are ten items included in this examination: the date is recorded, temperature and pulse are carefully taken, a close inspection of the eyes, the skin of the face, neck, arms, hands, and especially the throat is examined. Excepting tobacco throats, cultures are taken from every throat that shows any hyperemia or that looks the least suspicious. This rule of taking cultures is strictly adhered to.

When employes live upon the premises their dormitories are sanitary as to location and construction. A separate bed kept supplied with clean bed clothes is provided for each. Proper bathing facilities are also provided. In addition to the ordinary habits of personal cleanliness milkers are provided with clean white suits and caps daily, to be worn while milking. The careful washing of the hands before milking each cow is another requirement. On some of the farms individual towels are provided to be used once only, where these are not provided, sanitary paper towels are supplied in abundance.

Each producer is required by his contract with the commission to report immediately to the commission any illness whatsoever of employes or of other residents on the farm.

The commission has arranged with a bacteriologist of recognized ability to examine all cultures taken from employes for purpose of diagnosis. Culture tubes are provided on each farm and the superintendents on each farm are instructed how to take cultures, and in the event of any illness of a suspicious nature such employes shall be quarantined, the attending physician shall be called and a culture sent at once to the bacteriologist approved by the commission.

Since November, 1912, seven hundred and seventy-five primary medical examinations have been made of employes on certified farms. Two hundred and ninety-seven or 38 per cent. of this number are of foreign birth, of this number besides American born, twenty-one nationalities are represented, viz.:

Germany	52	Norway	8
England	32	Hungary	8
Holland	31	Scotland	4
Sweden	30	Poland	4
Denmark	30	Belgium	2
Russia	24	Bohemia	1
Wales	21	Servia	1
Ireland	21	Turkey	1
Austria	13	Roumania	1
Switzerland	10	Japan	4

There have been one thousand nine hundred and seventy-five medical examinations made beside the 775 primary examinations since the work of medical supervision has been in force. There have been three hundred and fifteen throat cultures taken; the results of the examination of these are as follows:

Staphylococci	222
Pneumococci	139
Micrococci catarrhalis	27
Saprophytic bacilli	18
Streptococci	13
Suspicious cultures	4
Diplococci	3
Pseudo diphtheria bacilli	2
Mouth bacilli	2
Spore bacilli	1
Fusiform bacilli	1
Various micro-organisms	2

Of the thirteen cultures that showed streptococci, two pseudo diphtheria, and the four suspicious, a second medical examination was made at once and cultures taken again which in each case were found negative, but as a precaution all

employes on that farm were instructed to use a mild antiseptic gargle just before each milking.

Considering that this was new work and that it incurred added expense to the producers, each and every one has responded to this work, and have co-operated heartily in every possible way, and have done, and are doing everything in their power to safeguard certified milk and to produce a milk that is beyond suspicion.

At no time since the first Medical Milk Commission was established has there been a case of either a contagious or communicable disease been traced to the use of certified milk. No case of tuberculosis has ever been traced to a certified milk farm. No epidemic of scarlet fever, measles, diphtheria, or streptococci sore throat has ever been traced to a certified milk farm.

The question of securing competent and efficient employes, the education and mentality of each, is a very serious problem to be met by the producer, for the average length of time that any employe remains on one farm is not over two months; on some of the farms, however, there still remain a few employes who were there from the beginning of the production of certified milk on that farm.

During the time that medical examination have been made regularly the number of employes found necessary to remove from contact with the care or handling of certified milk have been very few. There have been no cases of the commoner infectious fevers found among employes on any certified farm.

The educational value of regular medical examinations has also had a very beneficial effect on each and every employe, with decided improvement in their personal cleanliness, knowing they were to be examined each month and oftener if necessary.

All of the producers have signified their approval of this work and believe that the primary physical examinations and the regular medical examinations made each month have done much to uplift the moral status of each employe.

In a few instances where new employes have refused medical examination, these employes have either been discharged at once or immediately removed from that part of the farm which would bring them in contact in any way with the care or the handling of the certified milk.

In October, 1913, a driver on one of the certified farms who was not in any way connected with the certified milk, who had been employed on this farm for three years and had not been away from the farm for several months, except to haul freight to and from the railroad station, which was about two and a half miles from the farm, was taken sick and a positive diagnosis was made of typhoid fever by the best known scientific methods; however, he had been removed to a hospital several days before the report of a positive diagnosis was made. For the four weeks following daily medical examinations were made of all employes on this farm, repeated analyses of the water and every other source from which contamination might have come, were all negative. There were no contact cases, no suspicious cases of typhoid fever removed from the farm and there has been no recurrence since on this or on any other certified farm.

Just a year ago in another locality near where four certified farms are located, an epidemic of diphtheria developed to an alarming extent. The public schools in this town were closed for weeks and all public meetings were abandoned, the nearest farm to this town is two miles. An enormous amount of work was done at this time. Employes on the certified farms in this locality were forbidden to leave the premises; no visitors were allowed; medical examinations were made each day of all employes, cultures were taken daily of each employe, results of which were all negative in every case. Every one that came in contact with cows or utensils or milk were required to gargle with a mild antiseptic just before milking, this precaution and every other possible antiseptic precaution was taken to protect certified milk.

At the outset of the epidemic of foot and mouth disease and knowing this disease was communicable from the lower animals to human, the Chicago Medical Society Milk Commission instituted certain restrictions as to the conduct of certified milk production during this epidemic. Each farm was notified that any employe who left the farm was not allowed to return, except the man who delivered the milk to the railroad station, and he, upon his return daily, was to immediately take an antiseptic bath and make an entire change of clothing, the wagon wheels were to be run through a solution of carbolic acid, the horses' hoofs and shoes carefully cleaned and

washed with an antiseptic solution. All dogs, cats and pigeons were to be killed or confined, any stray animals coming onto the farm were to be killed at once. No visitors or peddlars were to be allowed on the premises.

The bottles and crates when received at the farm were to be immediately immersed in a solution of the chloride of lime and the wagon sprayed with the same solution.

If an outbreak of foot and mouth disease occurred within a radius of five miles of any certified milk farm, all the milk from that farm was pasteurized at a temperature of 155 degrees F., for thirty minutes and until the quarantine was removed from the infected farm.

Medical safety means the conservation of health, it is preventive medicine, not curative. To stamp out an epidemic is to some a far more notable achievement than to prevent its occurrence. If a child should be scalded to death in boiling milk the incident would have the elements of human interest, but when disease carries away thousands, nothing happens. The efforts of prevention are obscure and negative, but the results of cure are evident and positive.

Direct evidence in the safeguarding of the certified milk supply in Chicago to its consumers is wanting, but this must not be interpreted as a reason for withdrawing regular medical examinations of employes on certified farms, but rather encourage us to even more rigidly enforce every rule that will help us to further safeguard certified milk.

The regular examinations of all employes on the farms producing certified milk has an immediate effect by keeping frequently and prominently before each employe the possibility of infection being conveyed by milk through infectious material.

Certified milk should have health examinations and inspections because in paying the extra price for an extra product, the consumers are entitled to and have a right to demand, that protection which medical supervision of employes gives.

In the propaganda of certified milk emphasis is laid on the safety of its production. Knowing the public have been educated to believe that such practical safeguards do surround its production, the milk commission for self protection should insist on such regular medical examinations and inspections, but they do not positively guarantee that no communicable disease will be transmitted by its product.

However, should such an accident occur evidence of regular medical examinations would go far in preserving the good name of certified milk. As yet no epidemic has developed on any certified farm, but the commission are on the alert and wide awake to the situation that the necessity may come at any time to act quickly and at once should such an unfortunate accident occur; in case an epidemic should develop on any farm, shipment of milk from that farm would be stopped at once, and not resumed until every scientific measure had been exhausted in the cleaning up of that farm and not until all danger of further infection had been eradicated.

Finally, in the campaign for pure milk every agency is necessary and above all the medical profession. Education is the main spoke in the wheel of the milk wagon. Education is the keynote in the campaign for clean milk.

The certified milk movement has been and is a medical movement. The medical idea is the controlling factor. The medical profession for self defense if for no other reason should be familiar with certified milk, its production and its uses. Physicians should know whether it is a good thing or not: if it is a good thing then the profession should be active in its propaganda.

3301 Washington boulevard.

Note: Discussion appears in the Section Proceedings.

THE DOCTOR'S OPPORTUNITY TO CONSERVE THE HEALTH OF THE PEOPLE.*

JOHN A. ROBISON, M. D.,
CHICAGO.
President Illinois State Board of Health.

Conservation is the most important topic of the hour. The nation is endeavoring to conserve the forests, the land, the food supplies, and, the most valuable asset of all, the lives of the people. In the conservation of the health and lives of the people there should be hearty co-operation between the local and state boards of health, and the rank and file of the medical profession. And it is my object today to point out some methods in which the doctors can co-operate in this work.

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

This work begins with birth and is carried on in its varied activities through the span of life.

Ophthalmia Neonatorum. This is a reportable disease, and one easily prevented if physicians and midwives will use the preventive measures immediately on the birth of the child. The State Board of Health provides a one per cent solution of nitrate of silver in a form easily applied, and its prompt and general usage will prevent blindness.

Diarrheal Diseases of Infants. Less than a quarter of a century ago the mortality among infants was appalling. But the work of the conserving of infants' lives has not only progressed through the efforts of the medical profession, but through the interest of the laity, as is evidenced by the work of such organizations as the Infant Welfare Society. The educational propaganda of the causes and prevention of infantile diseases has borne good fruit, and the doctor has an abundant opportunity to be instrumental in the saving of the lives of the children. The problem of the greatest importance is the food question, especially the supplying of pure milk, and how the infant and child should be nourished. The physician should carefully investigate the source of food supply, and the manner of the distribution of the same, in all cases of infants not breast-fed who become ill through improper feeding. The doctor should carry on private dairy inspections, and if insanitary conditions are found, the local board of health should be notified, and in case it will not act the State Board of Health should be informed. Such activity on the part of the doctor will not be interpreted as meddlesome by the community, but he will be applauded as a benefactor and a conserver of human lives.

Diseases of Childhood. This is the period of life when the child is exposed to a multiplicity of infections and contagious diseases. Many of these diseases are the result of hereditary tendencies, many are due to environment and ignorance, poverty, poor housing, and criminal conditions. The eradication of disease at this period of life often means a profound study of the sociological conditions, an awakening of the community conscience, and the education of the people. Here is where community co-operation, such as has been described by Dr. Ruediger, secures the greatest efficiency in the prevention of disease. It secures not only greater control of existing disease, but stimulates community effort to change conditions which predispose to disease.

And the physician's duty to his clientele, his community and himself, is to be active as an educator and lead the campaign for the prevention of communicable diseases. He should insist on the efficacy of vaccination against smallpox, the use of antitoxin in diphtheria, and the prophylaxis of antityphoid vaccine.

The physician should carry out strictly quarantine in quarantinable diseases, and the community would soon realize its value and the economic gain which results from strict quarantine.

And, in order that health authorities may know when it is necessary to maintain quarantine, it is absolutely essential that physicians shall co-operate with them by promptly reporting all quarantinable diseases. It is impossible to effectively control tuberculosis, typhoid fever, scarlet fever, industrial lead poisoning, or any other preventable disease, without a knowledge of the occurrence of the cases. The degree of perfection regarding the notification of disease in any community may be taken as an index of the honesty of the doctors, the intelligence of the community and the efficiency of the health administration. A physician who does not obey the law requiring the notification of reportable diseases is not a law-abiding citizen. He, also, is not affording his families that protection against disease which they reasonably expect of him, as it is his duty to protect his clientéle against disease, as well as cure existing disease. When he takes care of a case of diphtheria, scarlet fever, or measles, he is at the same time rendering a service to the public in preventing the spread of the infection. The time has arrived when the medical man must realize that his proper function is to *prevent* rather than cure disease. His duties are rapidly becoming more largely official, in the sense that his services are rendered to the community and not exclusively to the individual.

The State Board of Health diagnostic laboratory does not desire to supplant the physician in the diagnosis of infectious or contagious diseases, but wishes to be considered as a consultant, willing to gratuitously serve the physician and secure

an early and accurate diagnosis in cases which are in doubt and might not be properly recorded.

The Practitioner as a Sanitarian. The family physician can conserve the lives of his families by departing from the routine treatment of disease and study the etiology and prevention of disease. As already suggested, this involves sociological work, the study of housing conditions, the influence of occupations, the physical defects of individuals, and the school conditions. It means an inspection of private and public premises, the abolition of filth, the breeding places of flies, mosquitoes or other disease-bearing insects. It means the establishment of open-air schools for backward children, the establishment of sanatoria for tuberculosis, of colonies for epileptics, schools for feeble-minded and delinquent children. It means the broadening of the field of medical endeavor, and a change in the economic conditions in the practice of medicine. In other words, the public will soon have to learn that the physician must be paid a retainer fee for the advice: "How to Keep Well," and that hospital positions, state county and municipal, must be salaried positions and not positions filled for the sake of clinical experience.

After the period of childhood is passed, then occupational diseases enter into consideration. In the Illinois law industries in which sugar of lead, lead chromate, litharge, red lead, or arsenate of lead are used or handled in any way, and industries engaged in the manufacture of brass or smelting of lead or zinc are declared to be especially dangerous to the health of the employes. Systematic inspection of such employes is required by law, and when any disease is found of an occupational character, it must be reported to the secretary of the State Board of Health, who will immediately notify the department of factory inspection. But factories are beginning to realize the value of medical inspection of their employes, and the fact that great efficiency cannot be secured from employes who are physically unfit. The result is that large manufacturing firms are employing physicians to look after the physical well-being of their employes, and such arrangements not only pay dividends to the firms, but are of great value to their employes and their families.

Rural Sanitation. It is in the rural districts that physicians can be of the greatest value in instituting needed sanitary conditions. In towns and cities the inhabitants receive more or less protection from the local boards of health, and the village and city laws are so framed as to compel the observance of precautionary measures. But in the country free clinics, district nursing and hospital advantages are rare. If one wishes to investigate the health conditions, let him visit a number of small farms and observe under what conditions milk and other food is kept. Notice the toilet facilities and how flies may infect the fresh milk and other food with human feces; how poor the ventilation is, and so forth. Notwithstanding the abundance of fresh air, the farmers nearly always sleep with closed windows and the rooms of the house are closed to sunshine and fresh air. The sanitation of rural schools, churches and public buildings and halls is generally a disgrace to twentieth century intelligence. Every physician who practices in the country could do effective work in undertaking to improve the sanitary conditions of the farms within a radius of ten miles of his home. He could advise the farmer as to the proper location of his well, barns and out-houses, not only as a matter of economical convenience, but as a prevention to the spread of disease. A rural district nurse, under the guidance of the medical profession, can do inestimable good to a community, and if such officers were liberally endorsed it would not be necessary to give so much money to hospitals, as there would be less necessity for curative institutions. Each man's home is as he desires to make it, and it is only when enlightenment controls a community that each householder is filled with an ambition to live better. There are many deaths in rural communities from typhoid, malaria, smallpox, measles, scarlet fever, whooping cough, diphtheria, influenza, tuberculosis, pneumonia and diarrheal diseases which need not occur if proper sanitation was enforced.

It certainly looks reasonable that as much money should be expended in instructing the dwellers in rural communities how to raise their own children and to protect themselves against infectious diseases as how to raise pigs and how to breed cattle and horses.

If we should enter into detail how the physician may be instrumental in carrying into effect these sanitary reforms, this paper would become

a volume, but enough has been hinted to arouse a lengthy discussion, if we have the interest in the subject that its importance demands.

CO-OPERATION IN PUBLIC HEALTH WORK BY NEIGHBORING SMALL CITIES.*

GUSTAVE F. RUEDIGER, M. D.,
Director Hygienic Institute for La Salle, Peru and Oglesby, Illinois.
LA SALLE, ILLINOIS.

The primary object of every health department is prevention of disease. Many people regard this as a simple task, but when we stop to consider the numerous sources and modes of infection and the remarkable advances that have been made in sanitary science during the last three decades, it soon becomes evident that the well-trained public health official must have at his command a diversity of scientific knowledge such as is required of scarcely any other individual. He must first of all be a capable and fearless administrative officer as he is responsible to the people for the enforcement of all health regulations and the proper keeping of records pertaining to his official acts. He must be thoroughly familiar with vital statistics because they are the final test of the efficiency of his work. Moreover, he must have a working knowledge of epidemiology, bacteriology, analytical chemistry, sanitary engineering, sanitary inspection of foods and dairies and often of medical inspection of school children and visiting nursing.

It is very evident from this brief enumeration that it is not possible for any one individual to completely master all of these branches of public health practice and it is in most cases not necessary that he should. In every up-to-date health department in our large cities these various branches are each in charge of a specialist. This fact, however, does not relieve the chief health officer of any of his responsibility and it is essential that he should know enough about bacteriology and analytical chemistry to make a correct interpretation of the results obtained by his analyst. He must also have sufficient knowledge of sanitary engineering to be able to give sound advice regarding the source and purification of the public water supply, and the most sanitary and most economic method of disposing of the community's sewage, garbage and other refuse. It is no longer possible to have a health department that is efficient in all the various activities that are essential to the successful protection of the health of the community unless we can put this work in charge of trained experts who can give all of their time to it and are willing to make public health practice their life work. The majority of our small town health departments are deplorably inactive and inefficient, partly on account of lack of financial support but in large part also because they are in charge of a health officer who has no special training in sanitary science and cares more for his private medical practice than for public health matters. Such a health officer, besides being poorly equipped for this important work, is often unsuited for the position because he allows his personal interests to interfere with his official duties out of fear of making enemies and losing the prospects of being called upon for professional services.

The average small-town health officer of this type rarely undertakes any official duties beyond putting up quarantine cards as occasion demands and serving notices on residents to have their privy vaults cleaned, after the neighbors have complained many times. They rarely undertake to make a careful investigation of all circumstances that may have a bearing on a case of contagious disease in the hope of finding the source of infection and estopping it. If others are infected from the same source they likewise have their homes placarded and the matter is allowed to go on until it comes to a standstill of its own accord or results in a fair-sized epidemic. Placarding the house is usually an important measure but it does not suffice when the new cases are caused by the periodic infection of a milk supply, or of some other foods, by a bacillus carrier. In case of an epidemic of diphtheria or scarlet fever the next step generally taken is to close the schools and again allow things to follow their own course. This step, however, is rarely necessary because better results can be obtained in other ways, but it has some points in its favor. It does not throw any additional labor on the health officer and it is likely to give him the feeling of having done his duty, and, in most instances, I don't doubt

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but that he has. If a community refuses to pay its health officer more than one hundred and fifty or two hundred dollars a year for the services then they can hardly expect him to spend much time in making daily inspections of the school children or making an extensive epidemiologic investigation, which may require the taking of many dozens of throat cultures to run down a diphtheria carrier or a mild but unrecognized case of this disease.

Too frequently the poorly trained health officer when confronted with several cases of typhoid fever, thinks of nothing to do to throw light upon the source of infection except to send several samples of well water and, perhaps, a sample of milk to the nearest bacteriological laboratory with a request that they be "analysed for typhoid bacilli." More than once have I had a bottle of milk sent to me with that request when upon investigation it was found that the one patient in the family had, prior to being taken sick, done the milking and had cared for all the milk used in the household—a circumstance which at once excludes the milk supply as the source of infection. There are, however, some health officers who still work on the assumption that dairy cows will occasionally secrete typhoid-infected milk. Such a person surely "is up against it" when he attempts to ferret out the source of infection in a typhoid epidemic that confronts him.

Enough has been said to show that in the average small community public health work is no farther advanced today than it was twenty-five years ago, and as far as affecting the public health of these people is concerned, progress in sanitary science might as well have been interrupted three decades ago. In many of the large cities, and in a few exceptional small communities, where properly trained experts have charge of this work, practically everything known to science is brought into service in preventing disease and checking epidemics in their inception. As a result we find that many preventable diseases are more prevalent in the small cities than in the large ones, although the problems are much alike in both places with, perhaps, some advantage on the side of the small community.

To remedy this unsatisfactory condition it is necessary, first of all, to get more specially trained full-time health officers into the service. In order to accomplish this it will be necessary to pay the health officer a living salary and insist that he devote all of his time to the work; take the position out of local politics, remove the restriction of residence in the community prior to appointment and provide sufficient financial support to equip and maintain an analytical laboratory and hire the necessary assistants.

At first thought this fundamental change in the handling of local public health matters in the small communities may appear to be a hopeless task, but it can be brought about in exactly the same manner in which we have solved the high school problem in these communities, namely, by co-operation of neighboring municipalities. For obvious reasons we cannot hope to have a first-class health department with its various specialists in every city of two thousand to ten thousand inhabitants, but if four or five such municipalities agreed to co-operate they would have no difficulty in maintaining such a department. We need a law in Illinois authorizing such co-operation. The law should provide for a board of health in the district composed of two or three members from each of the co-operating cities, to be appointed by the mayor for terms of five years. The board must be a continuous one and not one which goes out of existence with every change of administration, which is accomplished by making the appointments in such a manner that only one member from each city retires in any one year. The board must appoint the chief health officer who should be the executive officer of the board and hold office until removed by the board for cause. Other appointments are made by the board with the advice of the chief health officer just as instructors are appointed in a high school. I can see no reason why the guardian of the health of the people, any more than the high school principal, should be dragged into local politics or be a voter in the community prior to assuming office. In fact, there is every reason to believe that an outsider brought in is likely to be more impartial and hence more successful than a local man.

The minimum requirements for such a co-operative health department will vary somewhat with the scope of the work that is to be undertaken. Under average conditions, where from 20,000 to 30,000 inhabitants are to be served, the

following staff will be found necessary: A chief health officer with special training in sanitary science and public health practice and a knowledge of medical inspection of school children; an expert bacteriologist and chemist who must be provided with a properly equipped laboratory for doing ordinary bacteriologic diagnostic work and making sanitary chemical analyses of water, milk and foods; a milk and dairy inspector; a sanitary inspector for the inspection of grocery stores, meat markets, restaurants, streets and alleys; one or two school nurses and an office girl and stenographer. Under certain circumstances the duties of the office girl might be combined with those of the bacteriologist. The chief health officer, in my opinion, should be a graduate in medicine but he should not be permitted to engage in its practice. The office equipment should consist of desks, filing cases with properly printed record cards, a typewriter, book shelves and a set of standard reference books. As the chief health officer and the food and dairy inspector have to do a considerable amount of traveling from place to place it is necessary to include one or two small automobiles in the initial equipment. The minimum financial support must be equivalent to from 40 to 50 cents per capita in the district served.

To my knowledge only two successful experiments have been reported in this field, which is probably due to the fact that there are almost insurmountable difficulties standing in the way of affecting such an organization. These difficulties arise chiefly out of petty local jealousies. The first of these experiments was carried out about two years ago at Wellesley, Massachusetts, under the leadership of Prof. Earl B. Phelps (Public Health Reports, Sept. 25, 1914), then of the Massachusetts Institute of Technology. In this experiment the following eight communities had agreed to co-operate, namely: Wellesley, Belmont, Framington, Weston, Needham, Melrose, Canton and Winchester, but the last three came in for dairy inspection only. The second experiment in this field is the one about to be described from La Salle, Peru and Oglesby, Illinois. In this experiment we are at present serving only three municipalities which are situated closely together, and our central health department has entirely replaced the old boards of health. There is one fundamental difference between our work and that in Massachusetts in that ours is supported entirely by a private donation. The scope of our work also is somewhat broader in that we are carrying out medical inspection of the school children and infant welfare work, and aim to give ample time to the chief health officer and the bacteriologist for original research.

La Salle, Peru and Oglesby are three small industrial communities with a joint population of approximately 28,000 people consisting largely of laboring people of foreign extraction, chiefly Poles, Austrians, Italians, Lithuanians, Irish and Germans. They are employed chiefly in coal mines, zinc works, cement works, a clock factory, a wheel and plow factory, and nickel-plating works. Many of them are almost illiterate and it is difficult to interest them in sanitation, civic cleanliness and civic pride. The housewives see no harm in throwing dishwater and other kitchen refuse out of the second-story window or back door and leaving it there for flies and rats to feed upon. Very dilapidated, unscreened outdoor privies were found in practically every block and manure piles were almost everywhere in evidence. It is needless to say that many of the alleys were in a filthy condition. Quarantine regulations were lax and difficult to enforce and the community never was free from contagion. Epidemics of scarlet fever, diphtheria and smallpox were of frequent occurrence and in a recent epidemic of smallpox many patients openly walked the streets in defiance of the health authorities.

La Salle had a fairly good milk ordinance but nothing was done under it except to collect the license fee and make a butter fat test once a month. Peru and Oglesby had no milk ordinance and none of the health departments made any bacteria counts of milk or inspected any dairies.

It was perfectly evident to many residents that a more efficient health department was needed, but as the cities had only a small fund available for health work, it was difficult to find a satisfactory solution of the problem. Moreover, the old health departments had nobody on their staffs with special training in sanitary science and hence did not have the confidence of the people which is so essential in bringing about a reform. Early in 1913, Mr. F. W. Matthiessen, with the advice of his son-in-law, Dr. Phillip S. Chancellor,

made a proposition to establish a co-operative health department for La Salle, Peru and Oglesby, with headquarters in La Salle, and supported by a private donation from Mr. Matthiessen. After a conference with the present director, the following plan of organization and operation was drawn up and submitted to each of the three city councils, in October, 1913, for acceptance: The plan provided for the establishment of a Hygienic Institute in La Salle, under the general guidance of a director who was to be selected by Mr. Matthiessen and Dr. Chancellor. At the Institute were to be maintained properly furnished offices with filing cabinets and printed blanks for keeping records and a completely equipped laboratory for making bacteriologic diagnoses and sanitary chemical analyses of waters and foods. The director of the Hygienic Institute was to be accepted by each of the three cities as their chief health officer or health commissioner; but in order to give this organization a legal standing, it was necessary that the mayor and city council in each of the three cities should appoint an assistant health officer who is a resident of the city in which he serves.

In order to keep these appointments out of politics as much as possible the director of the Institute is given the right of nomination of the appointees. It is understood that these assistant health officers shall work under the direction of the director of the Institute, but we have no written agreement to that effect. This co-operation is secured, however, by virtue of the fact that they draw their salaries from the Hygienic Institute, the funds of which are controlled by its director. The director has a three years' contract with Mr. Matthiessen which gives him rather full control of the Institute, and the city ordinances give him full charge of the health department. He is empowered to select his staff of assistants which at present consists of a bacteriologist, a school nurse, an infant welfare nurse, a dairy inspector, a stenographer and bookkeeper, a laboratory helper and the three assistant health officers just referred to. Everybody on this staff draws his salary from the fund given by Mr. Matthiessen.

Our plan provided further that each of the three municipalities shall engage a sanitary policeman, who is to work under the direction of the health commissioner, but shall be paid by the city. The cities were also to provide for the collection and disposal of garbage and to adopt a more up-to-date sanitary code which would embody recommendations made by the director of the Hygienic Institute.

For the three assistant health officers, who are medical practitioners and give only a part of their time to this work, were selected Dr. B. E. Fahrney, La Salle; Dr. O. C. Yoder, Peru, and Dr. R. G. Cressman, Oglesby. They act in the capacity of medical inspectors and are virtually in charge of the contagious diseases in their respective districts, including the public schools, which they are expected to visit at frequent intervals. All contagious diseases are, however, reported to the central office. Physical examinations of the school children are carried out from the central office by the director, the bacteriologist and assistant director (Dr. Edward Hatton) and the school nurse.

The general plan outlined was accepted in October, 1913; the new ordinances were passed in April, 1914, and the new health department took charge on May 15, 1914.

In formulating our plan of organization of the Hygienic Institute and the co-operative health department, economy of operation was not the paramount consideration. The first thing sought after was efficiency in public health administration, but those who advanced the project were desirous that original research should also be provided for. We, therefore, aimed to have assistants enough to allow the director and the bacteriologist to devote considerable time to this important side of the work. Mr. Matthiessen's donation in support of this work was as follows: Twelve thousand dollars for a suitable building for offices and laboratory, five thousand dollars for laboratory equipment and office fixtures, and sixteen thousand three hundred and fifty dollars annually for salaries and maintenance.

SUMMARY OF FIRST YEAR'S WORK.

When the co-operative health department began its activity there were a number of cases of scarlet fever and diphtheria in La Salle, Peru and Oglesby and a few cases of smallpox in La Salle. It was found to be almost impossible to enforce quarantine regulations unless a watchman was stationed at every house under quarantine, which was impossible for financial reasons. Moreover, all mild cases were kept concealed

and often were not discovered until after convalescence was well advanced, or in cases of scarlet fever, until the patient began to show signs of edema from a nephritis. In the face of these difficulties practically no progress was made during the first six months in stamping out contagious diseases and we had a good sized epidemic of scarlet fever in La Salle in July and August and an epidemic of diphtheria in October, and one in Peru in November.

The scarlet fever epidemic was spread exclusively by contact as we were able to gather positive evidence in nearly every case that the child had been exposed. Most of these exposures were brought about by the parents with a full knowledge of what they were doing because they persisted in visiting the homes of friends under quarantine and often took their own children along. The epidemic was finally checked by putting on more watchmen to stop this visiting. The diphtheria epidemic in La Salle was spread by improperly washed milk bottles and was checked by getting that particular dairyman to steam sterilize his bottles before refilling. Over 65 per cent. of the cases were on this milk route; they were widely scattered and in families of all social stations, which made it seem very improbable that direct contact had anything to do with the epidemic. The epidemic in Peru occurred in one of the public schools and was handled by Drs. Edward Hatton and O. C. Yoder. It seemed to originate from a pupil who had been readmitted after convalescence, but was later found to be still harboring diphtheria bacilli in his nose. The entire room was cultured, eighteen carriers were found and excluded, the woodwork was disinfected with a liquid disinfectant and thus the epidemic was brought to an abrupt close, with the loss of only two days of school work.

These diphtheria epidemics got a good start because many of the cases were so mild as not to require the services of a physician. The services of the school inspectors and especially those of the school nurse were of inestimable value in both epidemics because many mild cases were found by visiting the homes and taking cultures. All children who had been treated for tonsillitis or had been absent on account of sore throat were refused readmission into school until a negative culture was obtained, and by this precaution several new epidemics were averted. It is our custom now to require two negative cultures from both nose and throat before quarantine is raised. School children are then excluded for several days longer and when they come back to school the nurse takes another culture and sends them home for the day. Nose cultures are most important as we found very many negative cultures from the throat with the nose still positive, but in most of these cases there was a periodic reinfection of the throat. A single negative culture for release is practically worthless. At least two or three on consecutive days must be obtained to be reliable. All of our release cultures are taken by a member of the health department.

All public schools are visited daily either by the school nurse or by one of the assistant health commissioners, for the purpose of detecting contagious diseases, skin diseases, pediculosis, uncleanliness and marked eye defects. Children are also subjected to a partial physical examination once every two years. These examinations are made chiefly by the bacteriologist, who is a graduate in medicine, the school nurse, and the director of the institute, and include tests for defective sight, hearing and nasal breathing, and examinations of teeth, tonsils, cervical glands, hair, etc., but not examinations of the chest and abdomen.

As the alleys in La Salle and Oglesby were in a very filthy condition, much time and energy were devoted to them. There were practically no garbage cans in use in Oglesby and very few water-tight covered cans in La Salle. In La Salle the blocks are laid out with a vacant space, about 75 feet square, in the center and these squares have for years been used as public dumping grounds. The new city ordinance forbids the throwing of animal and vegetable matter into any street or alley, open or enclosed public or private place, and requires kitchen garbage to be kept in water-tight, covered garbage cans. The custom of throwing all refuse into the alleys and these vacant squares was so firmly established that a considerable number of arrests were necessary before any improvement could be noticed. Considerable improvement with respect to garbage has been obtained during the year, but many families still use old wash tubs, barrels and wooden boxes, but we hope to do away with

these during the coming summer. In Oglesby also a great improvement is noticeable in the alleys and backyards, owing chiefly to the activity of the sanitary policeman. In Peru the alleys were in a better condition and are now being kept quite clean. Garbage is hauled away at least once a week in the residence districts of each of our three cities, and oftener from hotels, restaurants and boarding houses.

The milk supplies came in for their share of attention and all dairies are being systematically inspected and scored and the cows tuberculin tested. About four hundred cows have been tested, and showed approximately 27 per cent of reactors. A number of the reactors were immediately slaughtered and among them were found several with generalized tuberculosis and one with several softened nodules in the udder. All that were slaughtered under inspection were found to be tuberculous. In La Salle and Oglesby practically all milk is now being delivered in sterilized bottles and about two-thirds of the supply in La Salle is pasteurized. In Peru only about one-third of the total supply is delivered in bottles as the city council refused to back up the health department in this measure. The greater part of it there is still dipped from cans on uncovered wagons in the streets. Bacteria counts and butter fat and total solids determinations are made twice each month in the entire district. A year ago the average bacteria count for the raw milk in La Salle and Peru was 623,238 and at the present time it is 232,916.

Grocery stores, meat markets and restaurants are being systematically inspected and scored and our program calls for the early discontinuance of all insanitary outdoor privies which are still found in nearly every block of our communities. About twenty-five or thirty of them were removed during the year, but progress in this campaign has been both slow and difficult.

Permanent records are being kept of all contagious diseases, births and deaths for the first time in the history of these communities. Records of deaths are obtained by requiring a burial permit to be taken out at the city clerk's office before a body can be moved for burial, and these permits are not issued until a proper death certificate is filed with the city clerk. Birth reports are voluntary, but each month we send blank report slips and an addressed envelope to every physician and midwife in the district, with a request that they send reports of all births at which they officiated during the previous month. If no return is made by the middle of the month we call up the delinquent by telephone and in this way we have had no difficulty in getting fairly complete birth reports.

Note.—Discussion appears in section preceding.

PRESENT PRACTICE RELATING TO CITY WASTES COLLECTION AND DISPOSAL.*

PAUL HANSEN, ENGINEER STATE WATER SURVEY, URBANA, ILL.

The problem of disposing of city wastes other than sewage is one which is increasingly pressing itself upon public attention. It may be regarded as the problem of municipal housecleaning. There is no municipal activity that is so much in the public view and which is so much criticised as the collection and final disposal of city wastes. Against this criticism, most city officials feel themselves almost helpless.

To properly understand the problem of city wastes disposal and collection it must be regarded as divided into three distinct branches, namely: (1) treatment of wastes by the householder; (2) collection of wastes; and (3) final disposal of wastes. These three branches are, however, so closely connected and inter-related that it is impossible to consider one of them without a consideration of the other two.

CHARACTER AND QUANTITY OF WASTES.

Before proceeding to a consideration of how city wastes disposal problems may be worked out it may be well to first state briefly the present available evidence on the character and quantity of wastes. For ordinary purposes wastes may be classified as garbage, ashes, rubbish, stable manure, and night soil. These terms are sufficiently well known to require no further amplification. The last two generally constitute special problems of a local nature and, therefore, will not be dealt with in this paper for lack of space.

Garbage in an American city amounts to about one-half pound per capita per day, equivalent

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

to 500 pounds or one-fourth ton per 1,000 population. One cubic yard of garbage weighs approximately 1,000 pounds. It averages 75 per cent to 80 per cent water, 2 to 5 per cent grease, and 18 to 20 per cent of material that has a market value as fertilizer. The organic matter in garbage is combustible and when freed of water has a calorific value of about 10,000 B. T. U.

Ashes vary from one-half pound to four pounds per capita per day, depending upon the season of the year, naturally the larger figure prevails in the winter time. Ashes, under ordinary conditions, may contain anywhere from 20 to 25 per cent unburned coal, which becomes available when burning mixed refuse under high temperature conditions. Ashes weigh approximately 1,200 pounds per cubic yard.

Rubbish amounts to about one-fourth pound per capita and is approximately the same throughout the year. Rubbish is a very bulky material and will average about 150 pounds per cubic yard.

HANDLING OF WASTES BY THE HOUSEHOLDER.

The problem of securing the proper handling of the wastes by the householder is, perhaps, the most difficult of all, and yet it is of highest importance that this part of the problem be adequately solved for if it is not properly solved, it may multiply the cost of collection many fold. From the point of view of the officials who have the municipal wastes in charge, the ideal condition would be reached if each householder could be compelled: (1) to have receptacles of specific material, size and shape; (2) to place these receptacles on the curb stone or at the back alley (if there is one) at the time the collector is scheduled to arrive; and (3) to observe a strict separation of garbage, ashes and rubbish, if such separation is necessary to economical final disposal. It would also be desirable to require the householder to systematically wash and sterilize containers, and to carefully wrap the garbage in newspapers before it is deposited in the garbage can.

Anyone who has had much to do with the public, knows that all this is well nigh impossible, though it is very closely approached in a number of European cities where the public is more ready to acquiesce in rigid rules and regulations. On the other hand, it is impossible to tolerate promiscuous methods on the part of the householder even in a liberty-loving country like ours. Many, if left to their own devices, would scatter garbage and refuse over back alleys and back yards, use filthy wooden boxes, kegs, and buckets for receptacles and interpose innumerable difficulties in the way of the collector for getting at and removing the several forms of wastes. Just what is a happy medium with reference to demands that may be imposed upon the householder is difficult to answer. Those who have had most to do with the matter feel that it is advisable to place the demands on the householder rather high, not only for the purpose of facilitating the collection of wastes, but also because of its educational value in promoting general cleanliness.

It is not believed to be imposing a hardship if the householder is required to have metallic tight-closing, non-leaking receptacles not exceeding sizes that one man may readily handle nor if the householder is required to maintain these receptacles readily accessible at the back alley in case there is one, or at the side or back door of the house in the absence of an alley. No collector should be required to enter cellars or travel an unnecessary distance from his wagon. Permission to maintain wastes in the cellars not only greatly increases the cost and difficulty of collection, but promotes slovenliness on the part of many people and greatly increases fire hazards.

Unquestionably it is a hardship on the poorer classes to provide themselves with metallic cans for garbage and ashes, and a serious question arises as to how their interests can be protected. In a number of cities where the rules require standard metal receptacles, the superintendents of collection waive such rules when they are convinced that poverty prevents compliance with them. In a few communities the municipality furnishes the containers or sells them for a nominal price, thus spreading the cost over the population as a whole. Such an arrangement has many arguments to recommend it. The principal objection thereto is the difficulty of inducing the householder to keep the containers in good condition when the householder is relieved of the financial burden of replacing it.

The life of the garbage containers may be greatly extended and incidentally they may be kept very much cleaner if the householder is required to drain the garbage and wrap it in

paper before depositing it in the receptacle. This would seem to be a very difficult thing to accomplish, notwithstanding the fact that it has many advantages for the householder. Yet it has been successfully accomplished in Minneapolis.

Proper attitude on the part of the householder cannot be accomplished without a vigorous campaign of popular education. This must be carried out tactfully and much stress must be laid on the fact that co-operation with the city officials not only permits better service and greater cleanliness, but also means a saving in money to the tax-payer.

COLLECTION.

The problem of wastes collection is a very complex one though there are certain well-established fundamental principles that may serve as a reliable guide in working out a proper system for any given town. It may be clearly seen that the success of the collection system is very intimately dependent upon the householder performing his share as already outlined. It is not to be expected, however, that the householder will co-operate unless the men on the collecting wagons are courteous and intelligent and it may be set down that one of the prime conditions to successful collection service is the employment of men who will meet these qualifications. Quite the opposite view has prevailed hitherto and it has generally been accepted that the garbage men must necessarily be among the cheapest and commonest of laborers. The wastes collection force will command much more respect from the householders and incidentally their self respect will be materially increased by providing them with neat uniforms and facilities for shower bath and change of clothes when the day's work is done.

The methods of collection are also greatly influenced by the method of final disposal. In some cities, for example, especially the larger ones, the combined cost of collection and disposal may be reduced to a minimum by treating garbage and refuse for the recovery of saleable material. This necessitates a strictly separate collection of the garbage, ashes and rubbish. The garbage can then be put through the so-called reduction process by which grease and fertilizer are recovered. The refuse may be sorted for the recovery of marketable materials and the ashes may be dumped for filling in hollow places.

In some smaller communities, separation of the refuse may be desirable so that the garbage may be fed to hogs and in this manner be converted into a marketable product. There is nothing insanitary in garbage disposal by feeding to hogs, provided it is correctly carried out.

In some cities (generally those of medium size) it proves most economical to incinerate ashes and refuse all mixed together. Under such circumstances the system of collection as well as the demands placed upon the householder may be greatly simplified. The collection department need have but one type of wagon, and the wagons may be filled with a relatively small number of stops. The householder is benefited, in that only one receptacle need be maintained and there results an additional advantage in that the mixture keeps down in large measure the bad odor of decomposing garbage.

With reference to the frequency of collection, it may be said that where the separate collection of wastes obtains, garbage should be collected twice a week in the winter time and once every day or every other day in the summer time. Ashes may be collected weekly or at longer intervals, local conditions controlling. It is common practice in many American cities to collect rubbish only once or twice per year, but better practice is believed to be once every two weeks or once per month. Combined wastes may be collected once per week or oftener as best suits the convenience of the householder and the collection department.

There is very much to be said on the subject of type of collection wagons to be used. Generally speaking, a collection wagon should be large enough to hold all that the collector can collect in one day, leaving merely sufficient time at the beginning and the end of the day to come from and return to the place of final disposal. There may be local conditions, such as steep grades and bad pavements, which will demand a smaller wagon than prescribed by the above rule. In such case, the wagons should be of a size that may be completely filled on each trip. Another advantage of the large wagons is that higher grade men can be employed as drivers and helpers for it will be permissible to pay much higher wages without increasing the relative cost of labor to wagon capacity. The wagons should be of a height to render it easily

possible for one man to empty into them an ordinary household waste container. Generally speaking, underslung wagons are best adapted to the purpose and the top should not be more than 5 feet from the ground. If such a low height is not practicable, due to the size of the wagon or other cause, a running board may be used.

Another essential requirement of the collecting wagons is that they be substantially made and so arranged that they may be thoroughly cleaned with a hose nozzle. On the whole, sheet steel bodies are preferable to wooden bodies, and rear dump is preferable to bottom dump because the latter is less cleanly and precludes the possibility of having the body low enough to facilitate loading.

Suitable coverings for wagons have received a great deal of discussion. It is not possible to say now that the final solution has been reached. A few years ago metal lids were favored, but these proved so noisy and became bent and out of order so readily that they have been practically discarded. Heavy oiled canvas has taken their place in large measure, though even this has many objections. In Minneapolis, where the householder wraps the garbage in newspaper, the heavy canvas has proved highly satisfactory. In European practice the tendency is toward elaborate coverings so arranged as to be open only when a household can is being dumped into it. They operate on various principles, some of which are very ingenious. Some forms of wagon coverings require a special householder's can so arranged that the can cover and the wagon cover are removed simultaneously after the can has been inverted and then only a sufficient opening is made in the wagon to admit the top of the can. This is a great advantage in European practice where mixed refuse is generally collected and loading of wagons is likely to be a very dusty operation, especially on windy days.

Perhaps it is not premature to speak of the relative merits of power-driven and horse-drawn wagons. Horses are still by far the more generally used, but it is quite probable that the larger wagons, especially such as are used in very large cities, will be more and more equipped with motors in the future.

The cost of collection varies widely, depending on local conditions. The minimum cost per ton is obtained where houses are built closely together, where standard receptacles are used and the receptacles are placed on the curb or in the alley prior to the arrival of the collectors. Such an arrangement permits of very rapid loading, hence a maximum collection for the time and labor involved. In suburban communities where the house lots are very large and there are no back alleys and it is necessary for the collector to walk long distances to get and return receptacles, then the cost of collection per ton reaches a maximum. Generally speaking, the cost of collection may be placed at $1.75 to $2.75 per ton or from 15 cents to 25 cents per capita per annum.

FINAL DISPOSAL.

Incineration. Final disposal in European countries, where much attention has been given to this matter, has become more or less standardized in favor of incineration of mixed refuse at high temperatures with forced draught. Partial recovery on the cost of disposal is made by utilization of the heat produced for lighting, pumping water and sewage and heating public baths. The clinkers are sold and used as an aggregate for concrete or as a base for sidewalk paving. In this country a great number of methods of heat destruction have been developed and more or less successfully used, but there is at the present time an increasing tendency to adopt incineration as practiced abroad. It is not to be expected, however, that incineration will entirely replace other methods now in vogue. Incineration at high temperatures is practicable for communities with populations of 50,000 and upward.

The cost of operating these incinerators where there is no return due to utilization of steam or clinkers is approximately 60 to 70 cents per ton. With full utilization of steam and clinker, the cost may be reduced to 20 or 25 cents per ton. Some enthusiasts have made the claim that with full utilization of the products, especially if the refuse is sorted for saleable materials, this process can actually be carried out at a profit.

Incineration has much to recommend it on sanitary grounds. As already indicated, it permits of the combined collection of refuse which eliminates from the streets and alleys in large measure the odor of decomposing garbage and prevents breeding of flies. It also simplifies matters for the householder and the collection

department. The plant promptly consumes all of the material, reducing it to an innocuous vitreous clinker and if the plant is properly maintained, there is produced very little odor and very little smoke. The claim is made that these plants can be operated without odor and without smoke. But this claim has not uniformly been substantiated.

Incinerators have an advantage in large cities in minimizing the length of haul inasmuch as plants of relatively small size may be located at different points throughout the city. This is not practicable with some other methods to be touched upon later.

Cremation. In the United States for a number of years, the rather make-shift method of burning garbage commonly called "cremation" has been in use. Various furnaces for cremation have been exploited and the process is generally applicable to garbage and dead animals alone, though the addition of rubbish would naturally not interfere with the process. All of these furnaces require additional fuel, variously estimated from 200 pounds to 700 pounds of coal per ton of garbage. They are effective and may be economical, especially where fuel is cheap. They are particularly applicable to small installations, more particularly of a temporary character, as for military and construction camps. Unfortunately many of these furnaces have been poorly designed and poorly constructed so that they have not given satisfaction and have usually produced very disagreeable odors. Very extravagant claims are made by manufacturers for furnaces of this general type, but, as a matter of fact, there is very little actual test data on hand to substantiate these claims. On the contrary, the few tests that have been made, more particularly by the Ohio State Board of Health under the direction of the writer, have shown high fuel consumption and but imperfect results as regards completeness of combustion and prevention of odors.

Reduction. The most typical method of final disposal in the United States is the so-called reduction process. This is applicable to garbage only and its adoption necessitates the strict separation of garbage from other wastes. The object of this process, as already indicated, is the recovery of fertilizer and grease. There are a variety of processes, all of which produce a rather pronounced odor disagreeable to most people and for this reason it is generally regarded as necessary to locate these plants remote from habitations, thus creating a long haul. To render the process profitable, it is necessary to handle large quantities of garbage, therefore, the process is only applicable to large cities. The practicable minimum population for a city using the reduction process is about 100,000.

A typical method of reduction consists in cooking the garbage for 6 or 8 hours with steam in so-called digestors. From the digestors, the garbage is conveyed to presses of one type or another which press the free water containing grease out of the garbage, leaving a so-called tankage with about 50 per cent moisture. The tankage is then dried in rotary kiln driers either heated directly by furnaces or by steam coils. From the driers, the tankage is taken to so-called grease extractors in which it is flooded with naphtha which dissolves the grease. The grease is subsequently recovered from the naphtha and the naphtha is used over and over again with a loss of about 5 gallons per ton of garbage. The tankage with grease extracted is enriched with a residue from the evaporation of press liquors and is again dried. It is then screened and the coarser particles that remain on the screen are ground and added to the fine screenings. This constitutes the marketable substance known as fertilizer tankage. It has a manurial value which commands a price of anywhere from $6.00 to $10.00 a ton.

The water, which is pressed out of cooked garbage from the digestors, also contains grease. It is caused to flow into a series of tanks in which the grease rises to the top and is skimmed off. This grease is mixed with the grease recovered from the naphtha extraction process and is sold at from 3 to 5 cents a pound, depending upon market conditions. It is of a low grade but applicable to many processes in which a low grade grease is permissible, such as in making low grade soaps.

The water practically freed from the grease is carried into evaporators, usually of the triple effect type, is reduced to the consistency of a thick molasses in which form it is mixed as already described, with a portion of the tankage before its final drying, thus enriching it in manurial value.

The foregoing description is that of a rather elaborate process, but it is one which, if carried out in a proper building suitably ventilated, will not create a great deal of odor, nor does it produce any liquid wastes that will defile neighboring water courses. Other processes usually represent some simplification of the one described. They do not have such a high recovery of saleable products, but are sometimes more economical, due to reduction in operating costs.

Experience in Columbus and Cleveland, Ohio, where garbage reduction plants are municipally owned, shows that this process can be carried out at a net profit of $0.50 to $1.90 per ton.

It is to be remembered, however, that this method of disposal does not take care of the ashes and refuse. If, however, the local conditions are such that dumping grounds for ashes and refuse can readily be found a plan involving the reduction of garbage may prove decidedly the cheapest method for solving the wastes collection and disposal problem as a whole, notwithstanding the increased complexity in the collection system.

Feeding to Swine. Feeding of garbage to swine is a method not to be despised. It also has possibilities of large profits, but on the other hand it represents a complex business enterprise which involves many risks. For its successful and sanitary operation, a rather elaborate plant is required, including suitable houses for hog pens, ample means for keeping the pens clean, and apparatus for sterilizing the garbage as soon as it arrives on the ground so that it will not undergo putrefaction until it is consumed, and so as to protect the hogs against any disease organisms that the garbage might contain. A hog farm using garbage for feeding may at least be expected to maintain itself and under favorable conditions may yield a substantial profit. Many people object to feeding garbage to hogs partly for esthetic reasons and partly for the reason that in actual practice it is difficult to secure strict adherence to sanitary requirements.

Burying. Another method of garbage disposal is burying. This is particularly applicable to small size cities, too small perhaps to utilize incineration and reduction yet so large that some centralized method of garbage disposal must be adopted. Burying of garbage can be most successfully accomplished in trenches about 18 inches deep, 4 feet wide and of indefinite length. A first trench is opened and into it the garbage is dumped, beginning at one end. As the trench is filled, a second trench parallel and near to the first trench is dug. The earth from the second trench is thrown over the garbage in the first trench and this process is continued indefinitely. Under proper management, burial of garbage gives very little offense and in due time the garbage is thoroughly humified. In an ordinary loose soil, complete decomposition takes place in less than a year, the only remaining traces of the garbage that can be found is a thin, black stratum resembling loamy earth with an occasional piece of crockery or rusty tin can to attest the original composition thereof. This permits the land to be used over again once every two or three years. An area of approximately one acre per 1,000 population will serve indefinitely. The land is not in the least injured; on the contrary, it is materially improved, though the tilling thereof is rendered somewhat more difficult due to the presence of occasional pieces of glass, crockery, and metal ware.

Dumping. Dumping is not applicable to garbage. It may be said positively that this cannot be carried out successfully without nuisance, even when garbage is mixed with other refuse. Ashes and rubbish, however, are reasonably suitable for dumping provided dumps are maintained in good condition. A little care on the part of the dump foreman will make it practicable to keep clean ashes or probably clean earth from cellar excavations on the surface and the dump need never be unsightly and need never create a nuisance due to the blowing about of fine ashes and paper. Frequent sprinkling of the dump is also of value. Land deeply filled in with ashes and refuse is not ordinarily suitable for building purposes, but it does afford a means for converting unsightly hollows into attractive parks and playgrounds. Many cities have availed themselves of this very satisfactory method of reclaiming waste land.

Recovery of Saleable Material From Rubbish. It is quite practicable to operate in conjunction with a dump or incinerator plant, a plant for recovering saleable products from rubbish provided the rubbish is collected separately. The principal saleable products are paper, rags, glass, leather, rubber, bottles, iron, clean tin cans, and

perhaps other substances. The recovery of the saleable products is quite large amounting to about one-third of the total collection. Profit derivable from the sorting process is variable, but may under favorable conditions reach $1.00 per ton of rubbish. It has sometimes been found profitable to carry on in conjunction with the recovery process a plant utilizing tin cans for window weights and roofing washers or any other purpose to which the material may be applicable. A refuse incinerator may often be operated economically and advantageously in connection with a sorting station. The heat developed may be made to generate steam for operating belt conveyor from which the saleable material may be picked off and sorted. Such conveyors are so arranged as to automatically dump the remaining material on top of the furnace where it may be readily pushed into charging doors. This combination, however, is more applicable to large than to small installations.

CONCLUSIONS.

The point to be emphasized in connection with the city wastes collection and disposal problems is the highly complex and technical nature thereof. It is eminently an engineering problem and trained engineers should be called upon in attempting its solution. This is becoming more and more the prevailing practice and it is rarely that large cities undertake the establishment of wastes collection and disposal systems wthout expert advice. It is also to be hoped that municipalities will realize the necessity of keeping this fundamental house cleaning problem out of politics. The proper handling of a wastes collection and disposal department for a municipality requires great skill and only men of special qualifications either by training or experience, or both, should be sought as the heads of city cleaning departments.

Note.—Discussion appears in section proceedings.

SOME REFLECTIONS.*

E. W. Weis, M. D.,
OTTAWA, ILL.

When our secretary asked me to relate some reflections I was of the opinion that it would be an easy thing to give many. Well, perhaps it would, but I will confine myself to a reflection that has gradually forced itself upon me and that, too, by a process of experience. I find that times are changing, brought by a necessarily changing environment. The atmosphere of a medical society is not at all the same as it was several years ago.

To conduct a successful society meeting some twenty years ago it was only necessary to send out the numbers of invitations of papers wanted and the return mail would bring acceptances. There was no trouble and little effort in making up a program. In fact, many members would chide you because you failed to give them the opportunity to read a paper, present some interesting case or detail some experience out of the ordinary. These men were actuated by the impulse of wishing to make things easier for their brother practitioner. It was a comparatively easy thing to write a paper in the old days. Textbooks were comparatively few and those on similar subjects all agreed. So, barring hypothetical and theoretical problems, a little digging into written references, plus experience in application, plus the desire to be helpful was all that was necessary. And how the old fellows enjoyed the discussions. They were discussions right. Never was a doubtful statement allowed to pass undiscussed and if need be contradicted. Many of you may remember how hours were taken up in the discussion of such subjects as diphtheria, the use of ergot, blue mass versus calomel, and when through there was confusion worse confounded. But they were interesting and led up to what we now have—exactness.

For many years I was secretary of our county society and viewed from the standpoint of my experience in the same capacity the last three or four years, I was very successful. Our meetings were very well attended, fully ninety per cent of the membership came and enjoyed the day and their patients were better off by reason of their having mingled and listened to the papers and discussions of their fellow members. So that, when I became State secretary, the changes that were inevitable, came so gradually as to be scarcely noticeable and when, as I saw frequently happen, I was asked to advise how to make county meetings interesting, at least of enough interest and importance so that the larger per

*Delivered at the Secretaries' Conference, May 18, 1915.

cent of the membership would be in attendance, I relied upon my former experience and told them that the fault did not lie with the doctors, but with the executive officer. That the secretary failed to ask the members to present papers and especially on subjects that the every-day practitioner desired information on. I can recall the frantic requests of many, many secretaries who wanted to know what they should do and how to proceed so that members of the profession would take an interest in society work. My almost invariable reply was that "it was up to you, doctor, that if you were energetic for the welfare of your society you would have very little difficulty." Please remember that this was the stand I took up to, say, five years ago. Since then, however, my notion on this matter has become radically changed, for I, in common with the other local secretaries, have found the obstacle to be almost unsurmountable and with them have had to change methods and conform to the conditions now existing, which are so different to what they used to be. Nowadays there is no doctor in active practice who cares a hang about discussing old-time honored time wasters. They would not lisen five minutes to the proposition of something that has been relegated to the past or what has been accepted as a dictum. What they want is something new, something authoritative, something that can be of use, coupled, perhaps, to a little refreshment for the inner man. Nowadays a society meeting becomes a part of a post-graduate course and as such must have the stamp of verity and of authority.

Therefore, it becomes necessary, if the executive officer wishes to present something for the consideration of his society, he must go to him or her who is specializing and request their presence.

To prove my contention, I will simply give the experience of our county society with a membership of nearly 100. We have two general meetings, annual and semi-annual. Three years ago we adopted three evening meetings to be held in some town on the Interurban System. These meetings were to be short and the essayists to be all of the town in which the meetings were held. In other words, local talent. Transportation was easy. At the general meetings of the society I found it necessary to import foreign talent. These came and their names on the program insured an attendance of at least sixty-five to seventy-five per cent of the total membership. The evening meetings of local talent only, at the very most developed only thirty per cent and as low as fifteen per cent. Now, the subjects at these evening meetings were interesting and were supposed to be helpful to the busy practitioner, short, snappy and live papers, but the results were just exactly as I told you. So, the reflection comes to me that the situation should be gone into carefully by every local secretary and no expense should be spared in securing men for the program that will bring out the largest possible attendance. The custom of our society then in later years is to pay the necessary traveling expenses of each essayist that comes to us. While these men give up considerable, even one day, it means a monetary loss to them. Of course, the old notion is they will get it back some day; perhaps they do. I know of many that never get it back, except the grateful appreciation of those that listened; so they should not be at a loss financially in being asked to come a great distance for our benefit.

If I have made my point clear I think that you will all agree with me that what is needed is a better offering of knowledge and a desire on the part of the society to pay in part at least for that offer. The methods of twenty, fifteen, ten and even five years ago are not the times of today. We must accept things as we find them today and not as they used to be.

There is another phase of this proposition that might as well be spoken of at this time, and, if possible, to ascertain by discussion the reasons therefor. As I stated in the beginning of this paper, in the olden days it was no difficult matter to secure plenty of local talent for a good live program. Physicians were anxious to be on it, but experience now shows that that is not the case today. I do not believe it is due to a general apathy or lack of desire to impart knowledge, but I am of the opinion that the underlying cause is, that the ordinary practitioner feels that he is either incompetent, or that he hasn't sufficient experience upon which to base personal knowledge in the presentation of any given subject. He feels that what he might have to say may be open to too much adverse criticism and not a general discussion. It certainly is not

pleasant to spend considerable time and thought on the presentation of a subject and to have a number of brother practitioners try to tear it to pieces, criticising the manner and method of presentation. There is a big difference between criticism and discussion. We are supposed to discuss, to join together in the consideration of any given topic, to supply added knowledge to that of the essayist. In this way it becomes a matter of general interest. Whether this criticism is responsible for the lack of desire or not, I wish you may determine, but there is something —for my experience in the last requests that I sent out to our members has certainly proved to me that there is something wrong somewhere. I sent out ninety-seven requests asking specifically for a favorable reply to the request for a paper. There was not a single favorable answer and only two who apologized and gave good reasons for not being able to. Of course, then I was driven to make personal requests of local members and to import foreign material. You would naturally suppose that owing to the lack of enthusiasm shown that the members took no interest in the meeting and that there would scarcely be a quorum present, but astonishing to say fully seventy per cent of the members were there, and after the meeting expressed themselves as being highly edified and entertained by what they heard and were very grateful for the class of subjects presented.

So then the reflection will come to all of us, that to sustain the interest of the medical profession in recognized work, other means must be adopted than those that have been used in the past. Local conditions must be carefully studied. There are no two county societies that will present exactly the same problems. The interest of unified work must be protected. By this I mean that the well being and interest of one physician should be that of all. Nowadays we have too much at stake to allow the individual physician to suppose that he either knows it all or can do it all. Take, for instance, the question that one of our members is sued for malpractice, then there is raised the cry for professional support. We have got to stand together and it is due to the honor of our profession that we are a unit in assisting in a defense. In the future these cases of malpractice will increase, for under the changing laws our legal friends find they must change their methods and will attack the doctor where heretofore the corporation has been fruitful ground. The slightest excuse is now only necessary for either the filing of a suit or the demand by compromise for damage. The thought has often occurred to me that it might be a good idea at almost every meeting of a society to discuss for a short time at least, the question of liability on the part of the physician. Our legal counsel is doing that very thing in a general way, by publishing a short article in the JOURNAL each month. He can, however, only tell the general supposition, but by the presentation and discussion of specific cases, much can be done to anticipate, and probably prevent, great notoriety in some given case.

As the medico-legal committeeman of our society, I have occasionally brought up this question by citing actual cases where suits were prevented without any publicity and have outlined the manner in which physicians should handle certain cases so as to fully protect themselves should any question arise later. No physician is immune should a bad result happen in the handling of a case. This need not necessarily mean the surgeon, but the ordinary practitioner in the treatment of, say, diphtheria, tetanus or puerperal infection. Why not know exactly where you stand? This knowledge can only be gained by concerted action on the part of all of us through discussion. Our patients are not as blind as they used to be, they are now asking pertinent questions and it behooves us to know how to make the proper answer.

In working for the benefit of ourselves, we necessarily work for the betterment of mankind generally.

Reflect on this.

OPERATIVE TREATMENT OF PELVIC HERNIA.*

HENRY T. BYFORD, M. D.,
CHICAGO.

My reason for presenting a paper upon this time-worn subject of pelvic hernia or prolapse is the tendency of operators to fix their attention too much upon the amount of displacement of the uterus and too little upon its relation to

*Read before the sixty-fifth annual meeting of the Illinois State Medical Society, Springfield, May 20, 1915.

the conditions of the surrounding pelvic tissues and structures. As the position of the uterus is a result of those conditions rather than the cause I have made use of the term pelvic hernia. Colpocele, cystocle, rectocele and enterocele, one or all in different degrees, both with regard to each other and to their individual development and duration, constitute just as important a part or parts of the hernia for the consideration of the surgeon as the uterine prolapse or hysterocele. And as the individual cases differ in these respects, no one operation or series of operations can be recommended for the treatment of what is usually called prolapse and procidentia of the uterus.

It will simplify our discussion to discard the somewhat prevalent belief that lacerations are the causes of the displacements. Extreme cases have been observed in young virgins. I have seen more cases in childbearing women with small lacerations than with large ones. I have seldom observed much displacement in cases of complete laceration of the perineum. This is due partly to the firm cicatrization and partly to the fact that a complete laceration usually takes place before there is much over-stretching and injury of the supporting tissues except in the line of laceration. Pelvic hernias are more apt to occur in women who have borne several children in quick succession, and also in those who have had a tedious second stage of labor in which a large or mal-presenting head has drawn down the distended vagina and lingered too long on an overdistended perineum. In these cases the anus is pushed backward and the traumatized levator and muscles are so well stretched as to be out of the way and the laceration, if it occurs, involves mainly the superficial perineal tissues. The overdistended vaginal walls are dragged down and partly severed from the surrounding connective tissue attachments, and the pelvic floor and perineum are distended and bruised by the head until muscular fibres, blood vessels and fasciae are extensively destroyed, while a visible or palpable laceration may be wanting. In such a case the normal contraction of a nonlacerated or slightly lacerated perineum does not take place right after the child is delivered, but the pelvic floor and perineum either retain their extended flattened form for a while and feel somewhat like wrinkled leather, or the collapsed vaginal outlet admits the whole or half hand without giving the normal elastic resistance. Vaginal involution is then slow and imperfect and the contused and ecchymotic muscles and connective tissue never regain their integrity. Subsequent labors are apt to be easy and quick ones and the patient may consider herself quite healthy or strong until the menopause approaches or has passed, when the displacements begin to show themselves as a result of the old injury plus the senile changes. Thus the extreme displacement may not be observed for many years after the occurrence of the injury that leads to it. Hence we should not expect to accomplish a cure by the mere repair of visible lacerations or by bringing visible muscles and fasciae together at the site of a laceration.

The history of the treatment of prolapse is largely a history of failure because operations were originally conceived on the basis of repairing the visible lacerations or of constructing a barrier at the vaginal entrance without restoring the normal action and position of the deeper pelvic structures. Perineorrhaphies, posterior and anterior colporrhaphies, no matter how extensive, with amputation of the cervix and even with removal of the uterus, were unsuccessful in a large proportion of cases. One of my first cases of procidentia was in a nullipara about sixteen years old. I removed an immense amount of relaxed vaginal wall and made the vulval and vaginal entrance smaller and narrower than normal, yet in a few months the uterus was again outside of the body and covered with as large a vaginal mucosa as before. The case demonstrated to what extent the vagina and perineal tissues will stretch when they have to withstand the entire abdominal pressure.

Ventral suspension is another irrational remedy that should be relegated to history rather than be employed in practice, because the whole abdominal pressure upon the relaxed pelvic tissues is supported by, and constitutes a drag upon, the new abdominal attachment. And this is true even when the perineum and vaginal entrance are also repaired, for the uterus is suspended far above them and usually stretches and attenuates its peritoneal attachments and finally rests on the pelvic floor, leaving the perineal and vaginal operations to resist the entire abdominal pressure. I suppose that some of the newer

operations which embed the uterus in the abdominal walls, and which should also be relegated to history, may be made to hold the uterus somewhere on the abdomen, but they are mutilating operations and should not be performed when more rational and scientific methods can be utilized. By way of criticism rather than acknowledgment of merit, I would like to add that if a makeshift ventral suspension be decided upon it will be advisable also to draw forward the round and broad ligaments and attach them to the anterior abdominal wall and thus take up the slack that exists in the underlying connective tissue. This requires but little time and adds but little to the gravity of the operation in cases in which extensive and prolonged traumatism is inadvisable.

In selecting the operative procedure for a given case of pelvic hernia, we should not be prejudiced in favor of any one operation because it may have been found to be efficacious in some or even in the great majority of cases as they present themselves. If we do so we will be liable to court failure by employing it in cases to which it is not adapted. Therefore, at the outset we should ascertain which of the individual structures are giving way and to what extent. We should also ascertain, if possible, which structures gave way first and which are still capable of functionating, or whether all of the supporting structures are giving way simultaneously or promiscuously. In other words, what was the beginning, what is the stage, what is the course, what the extent and what will be the end? Such an orientation will help us to determine how much operating, as well as what particular kind, must be done.

With regard to the beginning we must carefully consult the history of the case, including everything bearing upon the cause, whether general or local, in childhood or childbearing, occupation, habits, records of previous examinations, operations, etc. The patient's observations and experiences will help us to determine the course and the stage; the time she first noticed symptoms of displacement or felt the vaginal walls or cervix at the vulva, the length of time since she was injured by one or more difficult labors, her age with reference to the menopause, whether the first signs appeared soon after possible or probable causes, or were delayed until the menopause or after, etc.

With regard to the extent and the probable ending, the examination is, of course, the most important. Not only the position of the uterus, rectum and bladder while the patient is standing, but while lying on her back on the examining table during relaxation, and their changes in position while she is bearing down; also the kind and place of the resistance afforded when the parts are pulled downward by vulsella and pushed upward as far as possible, and the part played by adhesions, cicatrices, senile atrophy, obesity, abdominal visceroptosis, etc., should receive attention. In incomplete cases we should note the relative position of the cervix and fundus uteri, the bladder, urethra, rectum and anus, the depth of the vaginal fornices, the size and shape of the torn or stretched perineum, the amount of laceration and cicatrization, the pathology and functional deviations of the bladder and rectum, etc. These are only a few of the things to look for and interpret and correlate, but they suffice to illustrate the fact that the finding of the pelvic viscera down against or protruding at or through the vaginal entrance gives us but little definite information as to what is really wrong and just what should be done.

Rather than classify the varieties of so complicated and varied a mechanism I will mention a few concrete cases that will serve as examples.

Take the case of a woman before or soon after the menopause in which the cervix comes down to the vaginal entrance when she strains at stool, or after a day's work in the laundry. Placing her in dorsal position we find the uterus and pelvic organs in a normal position except that the cervix is not quite as near the sacrum as it should be, and there is a little sagging of the tissues about the vaginal entrance. Asking her to bear down vigorously, while we hold the finger in the vagina we feel the uterus descend to the vulva with its long axis following the curve of the pelvic axis, with a slight yielding of the perineal body and neck of the bladder. When the patient ceases to bear down the uterus gradually recedes and returns to an approximately normal position. Here the pelvic connective tissue which suspends the uterus has not given way but is going to under the conditions that have existed. There is no cystocele or rectocele,

but the vaginal outlet is relaxed. The perineal body has lost its normal shape and resistance, either from visible or palpable lacerations or from submucous and subcutaneous destruction of tissue, and instead of supporting a normal vaginal entrance allows an anterior or posterior vaginal fold, or both, to show between the separated labia. The lower supports have been impaired and upper ones are yielding to the force of abdominal pressure. If we can get such cases before the uterine descent has existed or been apparent for many months we may hope for a cure by a perineorrhaphy and a posterior and, if necessary, an anterior colporrhaphy which take off a portion of the sagging vaginal walls and draw together the fasciae and muscular fibres from either side of the rectum and bladder. I might say that to hunt for and dissect out and suture torn ends of muscular fibres is not usually practicable. There is ordinarily no large visible tear and there may be but little visible muscle left. This is one of the simplest kinds of cases, but as senile atrophy progresses the descent of the uterus becomes progressively greater until the cervix protrudes from the vulva and a procidentia results whose mechanism can no longer be determined with accuracy. It may then be necessary to remove the uterus and suture the stumps of the broad and sacro-uterine ligaments to the vaginal walls, as will be described later.

In other cases there may be an anterior colpocele or small cystocele, or a posterior colpocele or rectocele in which the uterus does not go back to a normal position when the patient lies down, yet if replaced will stay in place until the patient bears down or stands up. If the uterus has only begun to descend or if the descent is only slight, the same kind of operation may be expected to suffice, but it must be more extensive. The cystocele calls for the removal of a strip of anterior vaginal wall extending from the neck of the bladder to the cervix, widening at the cervix so that the relaxed fascia can be drawn together from the sides and united in front of the cervix. If the cystocele is a large one of long standing and the uterus has descended to the vulva and the patient has passed the child-bearing period, the bladder may be separated from the uterus and anterior vaginal wall and a vaginal fixation of the uterus be done. A posterior operation will be required which will vary from a simple perineorrhaphy to an excision of a portion or nearly all of the posterior vaginal wall according to the condition present, whether it be an ordinary laceration, a posterior colpocele or a rectocele.

Perhaps the largest number of cases of uterine descent are connected with retroversion of the uterus and laceration or relaxation of the vaginal outlet and perineum. If these cases are encountered before much descent has taken place an operation to antevert the uterus will be required in addition to the perineorrhaphy and colporrhaphy. If the patient has had the menopause a vaginal fixation is ordinarily the best way. If, however, there is a liability to pregnancy an Alexander operation is preferable accompanied with, if the abdomen be opened, application of the sacro-uterine folds. If the patient is near the menopause a ball pessary may in some cases be advantageously worn until the menopause and then a vaginal fixation be performed, or a sterilization of the patient may precede the vaginal fixation.

The presence of a large cystocele in such cases may call for a complete interposition of the uterus between the bladder and the anterior vaginal wall. This operation is efficacious even when there is considerable descent of the uterus with appearance of the cervix at the vulva. A separation of the bases of the broad ligaments from the cervix and their attachment or crossing in front may be made to assist in retaining the uterus. An interposition of the uterus without attention to the surrounding lesions cannot always be depended upon.

When the cervix is long it should usually be amputated. There is a class of cases in which the fundus uteri or the cornua or the adnexa are held in the cul-de-sac of Douglas or against the sacro-uterine ligaments by old adhesions, while the descent of the vagina and other pelvic tissues stretch the cervix supravaginally until the os reaches the vaginal entrance, or even protrudes. In such cases it is usually best to leave the already fixed fundus alone and perform high amputation of the cervix, for the fundus is already supported by its old attachments. Operations for the relief of the lesions and displacements of the vaginal outlet will, if thoroughly done, complete the cure.

When there is complete procidentia, practically

all of the pelvic supporting structures are torn or overstretched beyond physiological repair. If the vagina, bladder and lower rectum are not completely turned out and the uterus not too large, a Watkins interposition operation with a perineorrhaphy extending well back along the posterior vaginal wall may be curative. If the case, however, is of long duration, the uterus enlarged, the vagina completely everted and all of the structures about the uterus excessively elongated and attenuated, it is impossible to operate upon the structures in such a way as to get any support for the uterus. Then the only way to get a proper hold upon the deeper supports about the cervix is to remove the uterus and suture the stumps of the broad ligaments so as to fold or overlap them and attach them to the bladder and vaginal walls. The reason for getting rid of the uterus is that it takes up so much room that we cannot get at the relaxed and elongated supporting structures in such a way as to advantageously shorten them and give them attachments that will enable them to again exert their supporting function. In extreme cases the whole or a portion of the vagina must be removed in order to draw together the relaxed connective tissue fibres.

There are many other kinds of cases, such as procidentia in the child or adult virgin, anterior vaginal enterocele in which the bladder is separated from the uterus and the intestine comes out covered only by the anterior vaginal wall, posterior enterocele in which the cul-de-sac of Douglas comes down to or through the vulva without bringing the rectum out with it, procidentia in which ascites or a uterine tumor acts in connection with relaxed or injured pelvic tissues, etc., all of which can be cured only by a recognition of the predisposing and determining factors in each case and applying the remedy intelligently.

DISCUSSION.

Dr. Robert T. Gillmore, Chicago: In the individual diagnosis of prolapse and laceration in the pelvic muscle and fascia it is primarily most important to determine accurately the structures that are involved if we expect to get a correct repair as well as a symptomatic cure of the patent.

Etiology. While we have anomalous cases of uterine prolapse in virgins, as stated by the essayist, the majority of cases are caused by the traumatism of labor and, unfortunately, is often due to improper obstetrical management.

Prophylaxis. The prophylaxis in these cases is of prime importance. Where we have a complete prolapse it could, in many instances, have been prevented. Asepsis during labor is a chief factor in preventing subinvolution, which means an increase in the weight and size of the uterus. The administration of pituitrin in uterine inertia may, in favorable cases, diminish the number of instrumental deliveries. If the forceps are used, traumatism may be avoided or lessened by applying the instruments before the soft parts are edematus or friable. Another important thing in the management of obstetrical cases is the postural treatment after labor. In other words, on the third or fourth day instruct the patient to lie on the abdomen and on the fourteenth or fifteenth day begin with the knee and chest position and continue this practice for two or three weeks. It is important to examine all confinement cases six to eight weeks after delivery in order to ascertain if there are any submucous tears, which condition it is not always possible to recognize immediately after labor on account of the distortion of the parts. Also, if you have done an immediate repair it is necessary to find out if primary union has taken place.

Treatment. When it comes to the treatment, each patient requires an individual technique. Occasionally it will be necessary to go into the peritoneum, between the bladder and the uterus. It must be a matter of judgment as to the amount of tissue you remove in order to get the normal caliber of the vagina. In regard to the repair of a cystocele in these cases it is essential to have the uterus present in order that we may draw the anterior vaginal wall upward and backward and place the bladder in its new position on top of the uterus; consequently, I am not in favor of hysterectomy. I believe that this latter operation and the Alexander operation have served their purpose, however, in developing the more complicated operations, such, for example, as the transposition operation. Hysterectomy, if done at all, should be resorted to only when it is distinctly indicated in such cases as malignancy or fibroid tumor, when, of course, the entire uterus must be removed; but whenever possible I believe it should be saved. The question of increased size of the uterus per se is not of much importance unless it is due to an actual hypertrophy of the walls of that organ. Under ordinary circumstances I believe that increased size of the uterus is due to passive congestion and after the organ had been restored to its normal position and the obstruction to the venous circulation is overcome it will return to its normal size. The uterus is positively essential in transposition operation if we would prevent a recurrence of the prolapse.

There is one other thing. The pelvic fascia is as important a structure in vaginal operations as the rectus fascia is in abdominal surgery. When a postoperative abdominal hernia occurs it is due to the fact that the fascia of the rectus muscle has not united or the catgut suture has been absorbed too quickly. I believe that in pelvic operations we must get the pelvic fascia together in order to support the abdominal viscera above.

COMPARATIVE X-RAY WORK.*

E. M. Sala, M. D.,
ROCK ISLAND, ILL.

I have chosen this subject for two reasons.

First. Because you have the normal and the abnormal always before you for comparison.

Second. Because comparative evidence is not permissible testimony in court cases.

As regards the first reason there can be no question about the importance of having both the normal and the abnormal before you for comparison. The degree of abnormality may be very slight and, therefore, almost unrecognizable, and yet if you compare the same with the normal you can readily see the deviation. In the first, I have also included views from different directions on the same plate; this avoids having two or more plates lying around becoming separated and at the same time has the whole case before you in a "nut shell."

Regarding the second reason, comparative evidence not being permissible testimony in court cases, I wish to say that I recently helped to win a malpractice case which was defended by this society and this point came up, and one of our radiographs was ruled out. Picture No. 21 was the one ruled out. This ruling of the higher court should, I believe, in x-ray work have some exceptions.

Things now often have to be changed to correspond to the later and modern ideas. For instance, if we were to rewrite our stomach anatomies today and have them correspond to the x-ray findings, we would put the bottom of the stomach on a level with the anterior superior spinous process of the ileum, the x-ray showing a normal stomach even below this point.

It is, of course, true that stereoscopic x-ray work makes a radiograph stand out better and gives the roentgenologist the view he sees in a perfect fluroscopic examination. It, too, in a way is a comparative proposition and might be ruled out by the court and it seems that if there is any place where comparative evidence should have a place, it is in x-ray cases where it would be impossible for even a specialist to make a positive diagnosis without the corresponding normal part for comparison.

The April, 1915, *Annals of Surgery* has an article by Dr. John Douglas which shows very nicely by means of the x-ray both the normal and the abnormal before and after correction of the abnormal. These wrists are side by side and one can readily see the displacement. While in this case the difference is quite marked and could be determined without a comparison, if the bones were only subluxated having the normal there for comparison would make it very much easier.

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 20, 1915.

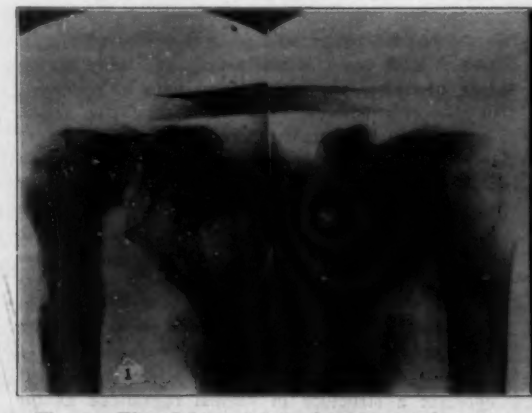

Fig. 1. The right and left shoulder joint on the same negative. In this case it would hardly be necessary to have taken the left shoulder for comparison because the disease is so apparent and yet with the two side by side your patient is able to understand that something is wrong. In the case in point, however, the knowledge was wasted because the patient is now having the disease treated by a "Chiro," who is adjusting her spinal vertebrae.

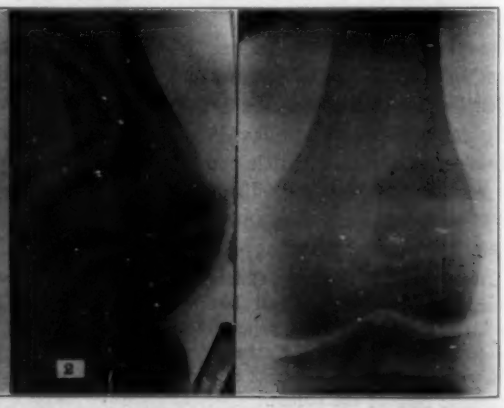

Fig. 2. This shows a bullet imbedded in the external condyle of the femur, both views are on an 8x10 plate. These views tell one at once that the bullet is imbedded in the bone and the surgeon must be prepared to enter the bone to remove it.

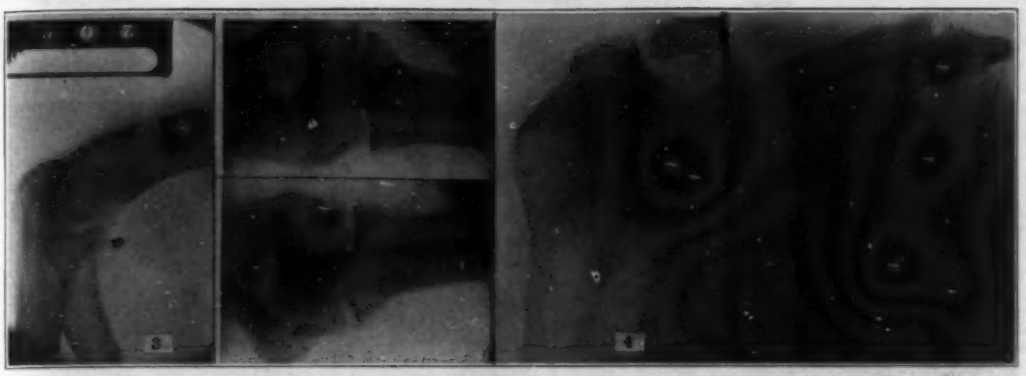

Fig. 3. Is a right and left normal elbow side by side and a lateral view of the joint which is supposed to be injured. By a close study of this plate in view box and comparing both sides we were unable to find any difference.

Fig. 4. Shows simply a dislocated shoulder compared with its normal fellow on opposite side. It is only conclusive evidence to be presented to the patient.

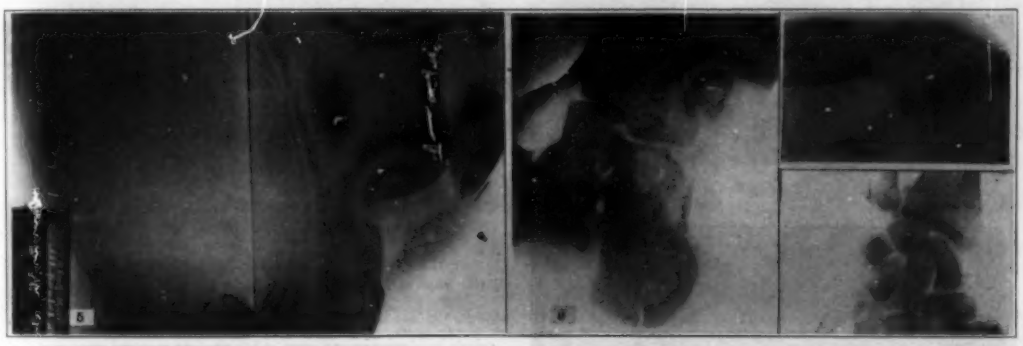

Fig. 5. This shows a lateral and anterior view of knee joint. Lateral view shows half a needle near lower edge of patella. Anterior view does not show the needle at all and yet it is a fairly good radiograph of the knee joint.

Fig. 6. Shows a foot, elbow and wrist all on one negative; all three joints were injured in a fall at same time. It is important to show all injuries together and they can usually be arranged on one negative and one's plates are not quite so apt to be mixed.

Fig. 7. Shows fracture through the surgical neck of humerus compared with normal on opposite side.

Fig. 8. Shows needle lower end of femur from two directions on same negative.

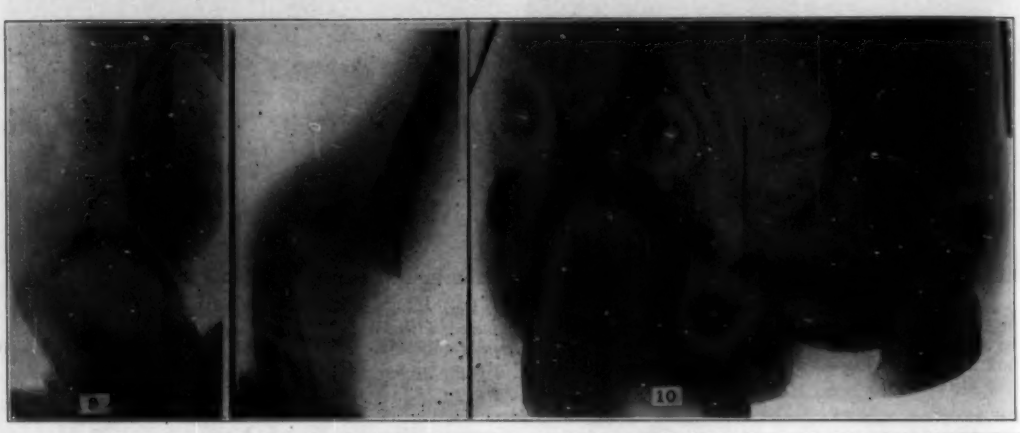

Fig. 9. Shows fracture of lower end of humerus above condyles; two views on same negative.

Fig. 10. This shows knee joint with four loose bodies, one of which locked joint at right angle compared with normal knee opposite side. It was necessary to open joint to correct deformity and four bodies were removed with perfect knee resulting.

Fig. 11. This shows right and left foot with fracture of os calcis left side.

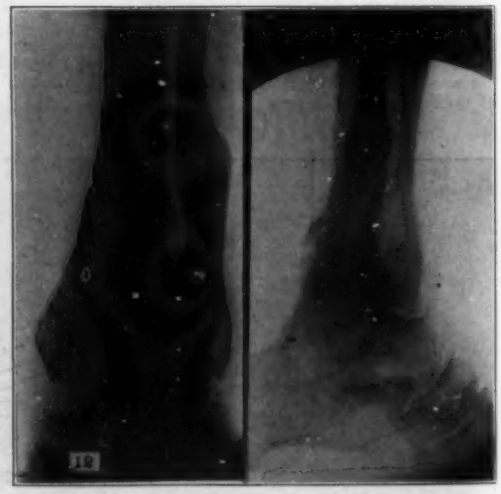

Fig. 12. Shows anterior and lateral view of an old fracture of tibia and fibula.

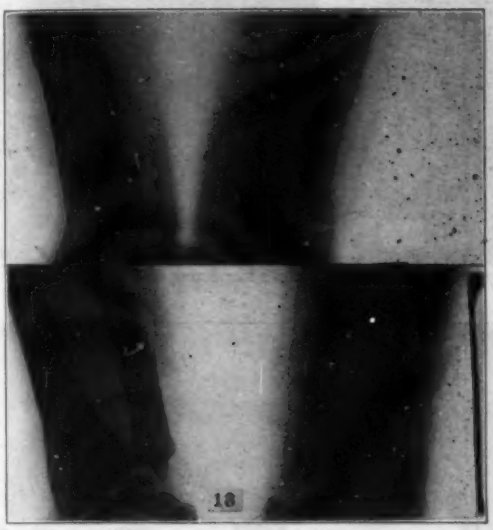

Fig. 13. Shows a very slight fracture at lower end of radius which would be very difficult to find without the normal radius on opposite side for comparison. In this injury a small piece of bone was broken loose. While this fracture might never have given much trouble even if we had not located it, yet the inference is the same. Had a piece of bone the same size been broken off inside the joint, the joint would be crippled until it was either removed or absorbed.

Fig. 14. Shows an anterior and lateral view of a fracture of the tibia. One might be deceived if he had only the lateral view to go by.

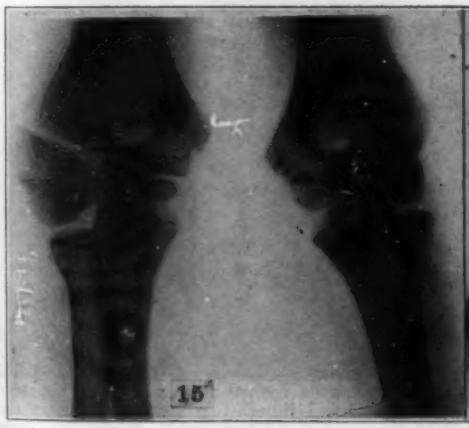

Fig. 15. Shows fracture of external condyle of humerus compared with external condyle in normal arm.

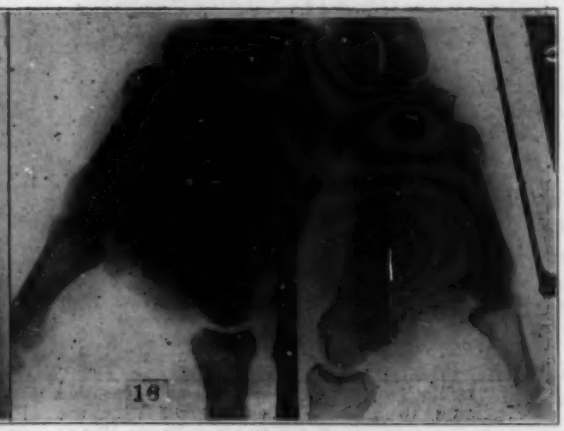

Fig. 16. Shows fracture of the thumb from two directions nearly the same.

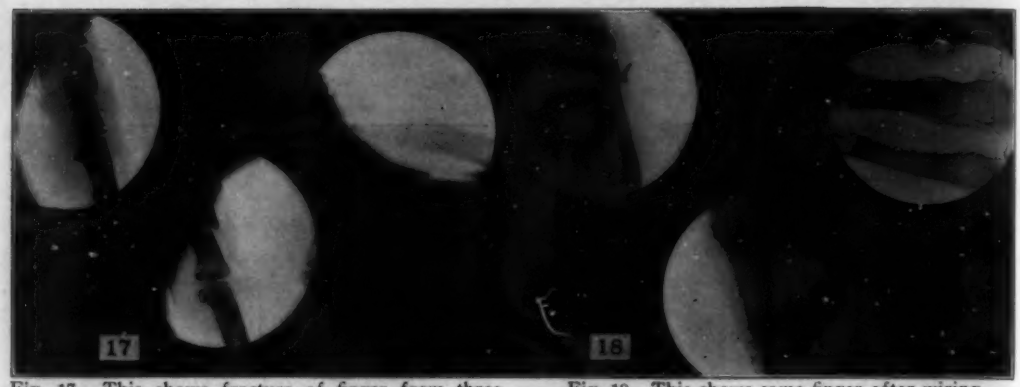

Fig. 17. This shows fracture of finger from three different directions on same negative.

Fig. 18. This shows same finger after wiring.

Fig. 19. This shows fracture of lower end of humerus from two directions.

Fig. 20. This brings out the importance of taking x-rays from more than two different directions in certain cases. If only one and two were taken, one would be sure that the eye of this needle was at least under the periosteum, but view No. 3 at different angle shows clearly that it is well away from the bone.

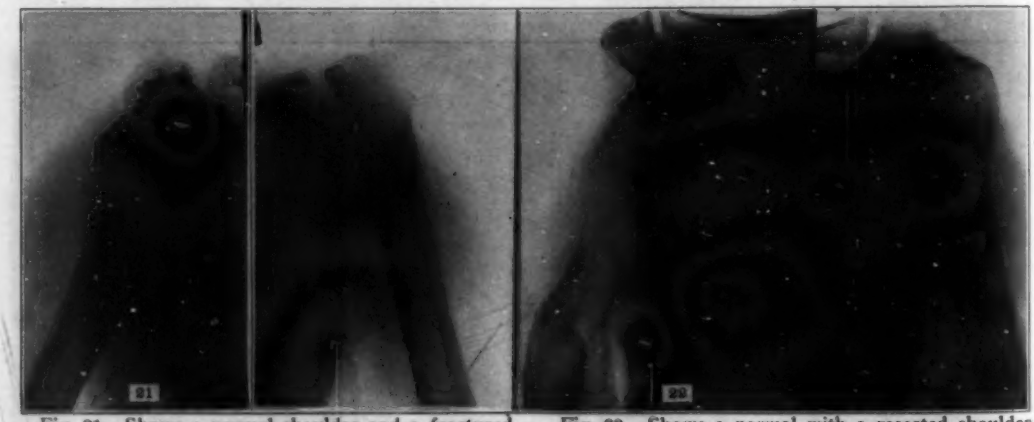

Fig. 21. Shows a normal shoulder and a fractured dislocation of the opposite humerus. This is the case which went through court and was won by the Illinois State Medical Society. In this plate we carelessly placed patient on negative wrong. It could have been printed half at a time and placed right side up, but we thought it best to take it from the negative just as it occurred on negative.* This particular negative the one being passed around was the one that was ruled out because it was comparative evidence.

Fig. 22. Shows a normal with a resected shoulder joint. This view is interesting because it shows the positive regeneration of bone without transplantation of bone. The head and about five inches of the upper end of the shaft were removed some time in the fall of 1913. The bone was sawed off straight across. It now shows a new strip of bone about half the distance.

*In the halftone both humeri are right side up, the x-ray print having been cut apart and rearranged as were some others.—Ed.

KEEPING THE CHILD NORMAL.*

WM. O. KROHN, M. D.,
CHICAGO.

This subject is an educational as well as a medical one. It involves not only a knowledge of the laws of his mental, physical and moral growth, but also involves the necessity of supplying the child with the environment in the home, at school and on the playground that will best conduce to the natural unfolding of his mental, moral and physical life.

We cannot proceed a single step in our inquiry as to how to keep the child normal unless we know what the child is, physically, mentally and morally, at the various stages of his career. What is he at birth? What is he at six years of age when he knocks at our schoolroom door? What are the various stages of the progress of his unfoldment?

In the first place, with reference to the physical growth of the child, growth focuses for a time upon one set of organs or functions, then upon another, until the whole body is developed; but all parts of the body do not grow at one and the same time. The body grows first in length, and then in girth, in breadth and depth of chest, in breadth and height of forehead, in breadth and length of face. Furthermore, all children unfold their physical powers in exactly the same order, the difference between children of any age consisting in the fact that they do not grow at the same rate.

To make a special application of this well-known fact of periodicity in physical growth, let us observe the development of the muscles of the arm. The muscles of the upper arm—those concerned in the functioning of the shoulder joint—are ripe and ready for training at least a year and one-half before the muscles of the fingers. The muscles of the shoulder mature for training six months before the muscles of the elbows, and these in turn five to eight months before the muscles of the wrist, which are ripe and ready for training from three to six months before the muscles of the fingers. When we insist that a child shall begin to write by means of the finger muscles only, with a small pencil, in narrow spaces on ruled paper or a slate, we run directly counter to the principles of growth and development that Nature has so plainly written in his constitution. Must not education, to be education at all, be in accord with these principles rather than in opposition to them? The child of six years, during the first days of his school life, chooses to make large, whole-arm movements, rather than little minute movements of the finger muscles. At first he requires almost an acre of blackboard space in which to write a few sentences. We must first train the large shoulder muscles before attempting to burden the tender undeveloped finger muscles, which are really injured by too such early strain and too involved activity.

Just as the body unfolds by stages, the mind also develops in the selfsame way—by stages—by periods—by epochs. The first of these periods is known as the period of the growth of the powers of sense. At birth, only two senses are operative, only two "windows of the soul" are open to receive the impressions Mother Nature has to bestow upon him—the sense of touch and the sense of temperature. Shortly after birth the sense of vision, then hearing, later taste, smell, rotation, joint and tendon, and the rest of the fourteen or fifteen senses with which we are endowed are added. During the first months and years of child-life, the senses must be permitted to act freely in order that later mental development may be full and complete. This is what we mean by "cultivation of the observing powers." All of the raw material of thought, of memory, imagination, judgment, reasoning, is supplied by the sense experiences. We do not have to teach the bird to fly; we simply *let* it fly. Neither do we have to teach the child how to observe; we should simply *let* him observe. But we must so environ him with natural objects, that he will have ample opportunity for the exercise of his powers of observation. Thus, and thus only, will the proper basis be laid for later mental development. The games and elementary science work in most kindergartens and in our best primary schools are in line with this natural law of growth.

The second epoch in the mind's process of unfolding is the memory stage. This is the period when the child is characterized by a prodigious power of remembering detail. A single hearing of rhyme or rule, of song or catchy phrase, is sufficient to insure its correct repro-

*Read before the Chicago Medical Society, May 5, 1915.

duction. We all are aware how much more difficult it is for us now to commit rhymes or rules than it was during our second or third year of school life.

The third epoch is the period of the growth of the imagination. Children love to live in a world of make-believe; they love to play circus, church or school. How easy it is for the child to assume the role of Davy Crockett, Daniel Boone, Robinson Crusoe or Buffalo Bill! During this period there is developed a mania which frequently occasions grave concern to parents. I refer to children's lies. Now, the lie of the child, it must be remembered, is by no means the same despicable moral offense as is the deceitful lie of the adult. It grows largely out of his desire to excite wonder. It is a bit of puerile experimentation. He tries it, and, if it works, he tries it again; if not, he quits. But in these rovings of the imagination he is not attempting primarily to deceive. The following is a case in point: Little Harold has listened eagerly to an account given by his father of the method by which the color of a plant's blossom (the hydrangea), each succeeding year, may be altered by changing the nature of the soil, by mixing it with sand, iron filings or black muck. Suddenly he exclaimed, "Oh, papa! I saw an apple tree today (it was in the fall of the year) with blossoms as blue as blue can be." "Where was it, Harold?" "In Boston," answered the boy. (Boston was thirty-two miles away and the boy had not been there for more than a year.) "How fortunate," said the father, "for I am going to Boston tomorrow, and I shall take special pains to see that tree." "Yes, but they had a big storm this afternoon, and it blew all those blossoms off."

The fourth period is characterized by the peculiar activity of the powers of judgment and comparison. (Instinct to trade or dicker and form judgments of value.) This in turn is followed by the period of curiosity. Curiosity must be properly developed. No child whose curiosity is throttled and starved will ever become a good reasoner. He must first ask questions and reasons of others in order to be able to ask questions and reasons of himself. The last faculty to develop is reasoning.

I have thus outlined the periods of mental development, for the purpose of showing that a well-organized course of study—a well-planned environment, if you please—must be in harmony with these processes of development in order to be successful. More depends upon the order of studies assigned than upon the contents of the studies themselves.

In some schools seven or eight years are still devoted to the study of arithmetic; yet we know that all of arithmetic can be taught the child, and better taught, in less than three years if placed at the proper stage of the child's development.

The time to educate any faculty is at the time that particular faculty is most rapidly unfolding. The time to cultivate the observing powers of the child is when the senses are most keenly alert, are most prominent in mental growth; the time to educate the memory is at the period of the child's life when its memory acts with greatest facility and accuracy. The time to train the imagination of the child is while he is manifesting his mania for the world of make-believe, as evidenced by his love for fairy stories and the like. Those studies that appeal to curiosity and reasoning should come at the time that these periods are undergoing their greatest growth.

Furthermore, it must be remembered that the child possesses at birth every brain cell with which he is ever to be endowed; no brain cells are added after birth. If we desire to prevent any of his brain cells from dropping out from disuse, suffering from atrophy, we must see to it that at the proper time, at the proper stage in the career of his development, every line of approach must be made, every pathway of the brain must be utilized if we wish to develop a rounded-out perfected type of individual.

Some important discoveries have been made with reference to fatigue and its influence upon mental and physical development. Fatigue is a physical poison, and bodily fatigue always induces mental fatigue. The nature of the chemical poison generated by fatigue has been investigated by the Russian chemist, Wedensky, as well as by Maggiore and Mosso, in Italy. Overstrain at school, by producing fatigue, may be the occasion of such destruction and disintegration of bodily tissue as to cause serious and permanent mental defect. The best period of the entire day, both with respect to mental quickness and mental vigor, is between the hours of 8 and

10:15 o'clock in the morning; the worst is between 11 and 12 o'clock. The period between 1 and 2:30 o'clock in the afternoon is the third best, while that between 3 and 4 o'clock is second best of the entire day. The heaviest school work should be assigned to the hours when the child's mind acts most vigorously and with the greatest quickness, and the lightest work should be so arranged as to come at the period of greatest mental depletion.

Because of the violation of the laws of fatigue, many children, who are compelled to work for long hours in factories, become maimed for life and are thus drafted into the army of dependents who must be supported by the state. In the large stamping-works and can factories, scarcely a day passes but some child is made a helpless cripple. These accidents usually occur after 3 o'clock in the afternoon. The child that has begun his work in the morning with a reasonable degree of vigor, after working under constant pressure for several hours, at about 3 o'clock becomes so wearied, beyond the point of recovery, that he can no longer direct the tired fingers and aching arms with any degree of accuracy. He thus becomes the easy prey of the great cutting knives, or of the jaws of the tin-stamping machine, a dependent step-child of the state.

The vision of a half million school children has been tested. Some years ago, under my supervision, visual tests were made upon 38,000 school children in Illinois, and these tests revealed positively the fact that defects in vision increase from grade to grade with the increase of school work. Eleven per cent of the children of our public schools have defective vision. This in itself would not be so serious were it not for the fact that defective vision eventually causes nervous disorders in any child. Furthermore, it is a rule that mental stupidity in children is practically always associated with defective hearing. The dull children in the school are, in 99 out of 100 cases, sufferers from defective hearing. We owe it to all children to examine their hearing as well as their vision. Nineteen per cent of the pupils in the public schools have defective hearing in some degree, in one or both ears. It does not seem to be a well-known fact that impaired hearing is so common. Children thus affected have been accused of being lazy, listless, inattentive and stupid, when, in fact, it was the ears alone which were at fault. No physician, teacher or parent, or other person interested in the welfare of children can afford to lose sight of the fact that the vast army of those suffering from nervous diseases is greatly augmented by subjecting the tender and immature nervous system of young children to the almost constant excitement and occasional over-pressure and nervous strain attendant upon certain arbitrary, cast-iron requirements in some schools. How can the influences playing such havoc with the nervous system of children be guarded against?

Physicians and teachers must know that the nervous system of the child differs very materially from the nervous system of the adult. They must be told that the child, especially in his nervous organization, is not a "little man"; he is not simply a "vest pocket edition" of an adult —he is different in kind as well as degree. His nervous system is structurally and functionally immature; it is excitable, unstable and under feeble inhibitory control; the sources of reflex irritation in the child are many, and the nerve centers discharge their force more fitfully and readily than in the adult. The period corresponding with the onset and establishment of the reproductive function in girls is a time when they are especially predisposed to nervous disease.

With children of good physical constitution, working within the limitations of their proper grades, there is almost no danger that a moderate amount of school work will in any way assist the development of neurotic disease, provided always that the hygienic conditions of the school, especially the light and ventilation, are good. But the strain of even ordinary school work affects children of poor physical development (many of whom are, unfortunately, precocious) very differently. A large number of these children, by reason of bad heredity, are neurotic, poorly nourished and anemic, and many of them have tuberculosis, a rheumatic or syphilitic inheritance; while others, from accidental causes, such as bad hygiene, improper food, etc., are below the normal in physical development. The nervous systems of such children are in a condition of malnutrition and are, therefore, not capable of doing the ordinary work of their grades in the public schools; and, if they are

permitted to do this work, or if, as is often the case, they are encouraged to push forward into higher grades than the one to which their years and strength should assign them, disastrous consequences will surely follow, and their nervous systems may be injured beyond repair.

Such children may develop chorea, hysteria and other neuroses.

Again, parents should beware of the danger of parading children before the public in early childhood. How sad to see the little child, unduly excited, robbed of sleep, worried with anxiety, attempt to sing a song, "speak a piece," or do a solo dance at a public evening entertainment. *When will* parents learn that *precocity* is an abnormal condition in the human infant. Precocity is *as abnormal as dullness.*

In conclusion, it has been my purpose to suggest that it would be more economical to keep the child normal than to attempt to correct his abnormalities after he becomes a dependent or delinquent. Success in keeping the child normal is only assured when we follow the natural laws of development that are written so plain in the constitution of every child. All children grow in exactly the same order. This is true of both physical and mental growth. The differences in individual children lie in the fact that they grow at different rates. It is necessary that every physician, parent or teacher should know these fundamental principles of growth in order that the child's physical, mental and moral health be conserved. I am more a devotee of social economy than I am of social pathology. I believe that it is the inalienable birthright of every American child to be entitled to a development into the best type of citizenship possible; best physically, best mentally, best morally. I say best physically first, because without good well-ordered physical development, it is impossible to have the highest type of mental achievement, and without the physical and mental, it is impossible to have the highest type of moral development. In dealing with children in seeking to promote their growth normally, it is necessary to open our hearts as well as our minds. The educational guidance of the child is not only a matter of intellectual grasp but the solution of its problems involves the coming into loving, conscious, personal contact with the child that we are seeking to develop into the best type of citizenship.

Great heart loveth a little child;
No matter how ragged and dirty, he
Opens his heart if a child it be.
He loves them all. They hold the key
To a heart for others all mystery.
Great heart loveth a little child.

Great heart loveth a little child;
He knows them all and they all know him;
To them he never seems to be grim
Or gruff or grouty. They all know his whim.
Feeling that love fills his heart to the brim.
Great heart loveth a little child.

And this:

O'er wayward childhood wouldst thou hold firm rule,
And sun thee in the light of happy faces;
Love, hope and patience, these must be thy graces,
And in thine own heart let them first keep school.

SOME PRESSING HEALTH NEEDS IN ILLINOIS.*

C. St. Clair Drake, M. D.
Secretary Illinois State Board of Health.
SPRINGFIELD, ILL.

It is a trite and hackneyed statement that the art of preventive medicine has progressed with giant strides—that the demands upon public health agencies are infinitely greater than they were a decade ago.

The reasons for these increased requirements are readily seen. Sanitary science has experienced almost spectacular growth. Our conceptions of the causes—and consequently of the prevention of disease—have emerged from superstition and speculation to demonstrable fact.

With this scientific advance, there has been a widespread popular interest in matters pertaining to health until there are now, in every community, certain intelligent individuals who appreciate what public health bodies can do for the protection of the people and who demand service commensurate with our knowledge.

This intelligent and interested public, incidentally, has become recognized as a valuable agency not only in encouraging observance of public health mandates; but in creating the interest and sentiment necessary to the enactment of new and progressive laws and ordinances.

In view of these changes, governmental health

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agencies have found it necessary to radically change their plan and program of activity. The health departments which have not seen the handwriting on the wall and which have not forged steadily and rapidly forward, are not fulfilling their present obligations. The health department which was satisfactory, or even exceptionally efficient, a few years ago, may be hopelessly deficient today and that without actual retrogressive step.

The requirements imposed upon governmental health agencies today are these:

1. They must so readjust their machinery as to adopt and utilize the important developmen' of sanitary science. This means laboratories and other technical equipment and the creation of departments for which no need existed in the past. It also means the employment of men of special training and ability.

2. They must recognize the enormous value of popular interest in public health matters and must develop the relatively new, but vitally important function of popular education.

This cannot be accomplished merely by type and printer's ink. Those who need education most are often not those who can read. Public health education must be carried not only into every county and community; but it must be taken personally into the very homes of the individual. Such a plan requires such practical agencies as community nurses, interesting and graphic exhibits, public lecturers and field workers.

3. The state health department cannot accomplish its purpose by remaining merely a central office ready to render aid when such aid is requested. Constructive health work demands active work in communities which may have no realization of their needs and which would never request help. The department must reach out into the individual communities by personal representation; must ascertain the existing sanitary conditions and, co-operating with and encouraging local officials, must meet emergencies as they arise and,—far more important,—must direct their activities so that such emergencies may be prevented.

For this purpose, full-time district health officers, representing the state in their individual localities and yet constituting a mobile force which may be brought together in any part of the state in time of need, becomes a very important part of our public health machinery.

4. Finally, the state health department should be the source of assistance, help and advice on every subject which may confront the local health officer in the performance of his duties and should be in position to give definite information on every health subject which may interest the private citizen. This means, of course, the consolidation of all state agencies having to do directly or indirectly with health into one general department or, at least, the co-ordinating of the various agencies so that they may operate smoothly under one general head.

It must be admitted,—however reluctantly,—that, while, at one time, Illinois stood in the forefront in governmental health activities, it has not kept pace with progress. While the state may not have stepped backward, it has not stepped forward during the period in which rapid advance has been the spirit of the time.

To the physicians of Illinois who are conversant with the facts, this statement cannot be construed as in any sense a personal criticism. As is generally known, the State Board of Health, originally created as a purely sanitary and public health organization, has been so burdened and almost submerged with new and extraneous duties, that these secondary functions have come to occupy three-fourths of the time and attention of the members, officers and employes of the board. The public health functions have naturally suffered through the ever-growing demands of such duties as examination and licensure of physicians. The situation is one which now requires,—as it has required,—radical readjustment.

The conditions as they exist in Illinois at the present time, are familiar to you all. You are also fully informed as to the possibilities of public health administration as carried out by more progressive and more fortunate health organizations. I use the term "more fortunate" advisedly. Public health is now recognized as a purchasable commodity. We can have as much of it or as little of it as we choose to buy and the most efficient health department in Christendom cannot secure more than good value for the money which the people, through their chosen representatives, empower them to expend for health protection.

In the few moments at my disposal today, I propose to ignore both existing conditions and ideal conditions and to confine myself to a frank discussion of what may be accomplished in Illinois under our present laws or with the aid of such legislation as may reasonably be expected to be enacted.

The duties of the State Board of Health may be broadly grouped as the purely public health functions and those of medical examination and licensure. The subdivisions of the two groups are manifold. The two functions necessarily encroach upon and impede one another and yet, the combination under one general head is the natural one. Certainly, the idea of their separation into individual state departments is entirely contrary to the policy of the present administration and to the principle of co-ordination now regarded as essential to efficient and economical administration.

The State Board of Health should have charge of both of these public functions; but they should be definitely separated into individual departments each with its own department head and its own machinery.

A plan of reorganization of the State Board of Health and its co-ordination with other state agencies having to do with public health, has been submitted by the board at the request of the Economy and Efficiency Committee of the General Assembly, which has endeavored to co-ordinate all existing departments and bureaus for purposes of efficient operation. While such a plan may not be written into the laws at the present session, it will unquestionably reappear at future sessions. It is sufficiently eminent to merit our serious thought and attention.

This plan contemplates a Department of Health and a Department of Licensure, the former of which would incorporate all of the functions now performed or contemplated by the State Board of Health, directly pertaining to health and sanitation, and also certain functions now undertaken by other state bureaus and departments.

Such an organization would include a bureau of medical inspections, with divisions of contagious disease control, of tuberculosis, of child hygiene and school inspection and would include diagnostic laboratories. It would also include a bureau of vital statistics, having to do with birth and death registration and with the transportation and disposal of the dead.

Among the newer and more radical departures, but one absolutely essential to efficient public health work, is contemplated a bureau of sanitary engineering, dealing with water supplies, stream pollution, sewage and waste disposal and sanitation of public buildings. This bureau would require engineering and research laboratories. It would perform certain functions now imposed upon the State Board of Health, together with others now performed by the State Water Survey and the Rivers and Lakes Commission.

Inasmuch as the most important consideration of foods and drugs, from their public standpoint, lies in their relationship with health, and, inasmuch as the supervision of the production and handling of foods is the duty of all local health departments, the Department of Public Health would have charge of the enforcement of the food and drug laws of the state, particularly in their public health aspects. This would necessitate the creation of a bureau of food and drug inspectons together with suitable food laboratories, taking over to a certain extent at least, the duties now imposed upon the State Food Commissioner and the Food Standard Commission.

The second major department,—that of Medical Registration,—would be charged with the examination and licensure of physicians, other practitioners, midwives and embalmers, as now performed by the State Board of Health, and the examinaton and licensure of those practicing other professions akin to medicine or regulated for sanitary purposes, such as nurses, pharmacists, dentists and,—for sanitary purposes,—the barbers. While such a plan would not disturb the integrity of the existing examining boards, it would co-ordinate their activities on an efficient and economical basis.

Another important division of the Department of Medical Registration would be a bureau of records and documents, having to do with the examination and issuance of documents and with the correspondence, records and accounts of all of the various divisions, departments and bureaus of the board.

Whatever the fate of this general reorganization plan, there are other pressing needs in the public health administration of the state.

In line with the policy of carrying the in-

fluence of the board personally into every community, the state should be divided into a number of sanitary districts, each with its own full time, medical health officer—a man of proper qualifications, properly compensated and not permitted to engage in the practice of medicine or in any other vocation. The district health officer will have charge, under the State Board of Health, of the general health supervision of his district and it will also be his duty to encourage public health organization and development in the various communities and to carry out a campaign of public health education.

He will enforce the laws and rules of the board for the control of communicable diseases; will settle questions of disputed diagnosis; will enforce the provisions of the birth and death law and, in the event of the enactment of the now proposed law, his services in this direction will be invaluable. He will also make inspections of country schools in which, in most instances, there is more urgent need for sanitary supervision than in cities. Until there shall be created a Department of Sanitary Engineering, as I previously suggested, the district health officer will be expected to perform the functions of such a department, as far as he is able, in his own district. He will be expected to advise communities relative to farm and city wastes, sewage disposal, water supplies, construction camps, picnic groves, summer resorts and amusement places, including the now widely prevalent nickel theaters.

One of his most important duties will be to encourage the adoption of sound health ordinances and the appointment of competent health officers, with reasonable compensation, in the various towns and cities of his district. The situation of the average Illinois community as to its health department is now deplorable. The 100 largest cities in the state, give an average salary of approximately $300 per year to their health officers, while some communities pay a salary as low as $5 per month and some pay nothing at all. It is not to be wondered at that municipal health is so frequently neglected. The missionary field for the representative of the State Board of Health in this field is well nigh unlimited.

Finally, the district health officer must give attention to the subject of public health education. He will be expected to give public lectures for churches, societies, farmer's institutes and similar organizations; to reach the teachers and pupils of the schools of his district and to hold frequent conferences with health officers and public officials relative to public health methods and procedures. He will encourage vaccination against smallpox and typhoid fever and will urge the utilization of other preventive means offered by the State Board of Health.

It is confidently expected that this important part of the state's health work can be established within a very few months. The state has already been divided into five districts. This is not a sufficient number, but is all that can be expected to be covered with available appropriations.

Within recent years, the board has gradually increased its service in supplying preventive and curative vaccines, sera and other like agencies. Diphtheria antitoxin and typhoid vaccine have been provided without charge, to rich and poor alike, for some time. Quite recently there has been begun the distribution of nitrate of silver in convenient containers for use in the prevention of ophthalmia neonatorum. By July 1, when the appropriations made by the present general assembly become available, it is expected that smallpox vaccine will be distributed free.

This last provision is especially necessary on account of the continued and increasing prevalence of smallpox throughout the state. Last year there were some 8,000 cases, directly or indirectly affecting 10 per cent. of the inhabitants—and these cases were chiefly among school children, indicating that the younger generaton is largely unvaccinated. Only the mild type of the disease saved the state from disastrous notoriety and tremendous business injury.

As it is, the disease, due directly to failure to vaccinate, has imposed great financial burdens upon various communities. If general vaccination cannot be encouraged otherwise, I would seriously suggest that legislation be enacted placing a special tax upon unvaccinated persons, the revenues raised in this way being devoted to the building and maintenance of smallpox hospitals.

In connection with its extension of service in distribution of curative and preventive sera, the State Board of Health has enlarged its laboratory service to include, in addition to examination of specimens from diphtheria, typhoid and tubercu-

losis cases, the Wassermann test and complement fixation for indigent persons. There will also be opened this week two branch laboratories for the prompt diagnosis of diphtheria—one at Mount Vernon, for the convenience of the southern part of the state, and one at Chicago, for the northern section of the state outside the city of Chicago. The laboratories will carry out examinations of repeated specimens from diphtheria cases to determine the proper time for the raising of quarantine.

Within the past year, the State Board of Health has gone as extensively as its appropriations would permit, into the investigation and inspection of dairies and milk handling plants and it is desirable that this should be greatly extended, especially among those situated outside the corporate limits of the larger cities. At the present time, when a municipality excludes milk of questionable sanitary quality from its markets, the producer, residing outside the corporate limits, sends his rejected supply into some other near-by and unsuspecting community which does not maintain milk inspection service. In this way, the protective measures employed by the larger cities, actually endanger the smaller communities. This can be overcome only by thorough and systematic dairy inspection by the state.

Recognizing the enormous value of popular education in public health work, the State Board of Health must engage largely in educational activities. In so doing, the board must have the hearty co-operation of the various extra-governmental health agencies which wield a wide influence over the state, such as the Illinois State Association for the Prevention of Tuberculosis, the State Federation of Women's Clubs, the Illinois State Conference of Charities and Correction, the Illinois State Medical Society, through its department of public health and hygiene, and the Illinois Association of Graduate Nurses, now interested in the extension of community nursing service.

To meet this need for popular education, the board has changed the character of its larger monthly publication from one entirely of professional and technical interest to one containing material which will appeal to the layman. All of the publications of the board dealing with preventable diseases, infant feeding and similar subjects are being rewritten in harmony with the most recent medical knowledge and are being made as simple and attractive as possible.

The public health exhibit, which has been created during the past year and which has already traveled extensively over the state, is being shown in the exhibit hall at this meeting of the State Medical Society and it is hoped that this exhibit is but a forerunner of a traveling exhibit which may visit every town and city from one end of the state to the other, accompanied by public lectures and introduced through the co-operation of County medical societies, of local civic and public health organizations.

It is not betraying a State secret to say that birth and death registration, as it has been carried out in Illinois in the past, is practically without value. A new birth and death bill has passed the senate at the present session without a dissenting voice and is now on second reading in the house. The prospects for passage are said to be good.

If this law is enacted it will place Illinois finally in the list of birth and death registration States and will create a state department of vital statistics which will compare favorably with those of any other commonwealth. The director of the United States Bureau of Census has pronounced the proposed law as "a very excellent measure."

Briefly, this law will centralize the birth and death records of the State in Springfield and will make the location of sub-registrars so convenient in all sections of the State, that there will be not the slightest excuse for failure to comply with the law's provisions.

It may be interesting to you to know that the obligation of collecting the statistical information for the death certificate under this law, is imposed upon the undertaker, while the physician is called upon simply to certify the cause of death.

A distinct weakness in the powers of the State Board of Health, which has been very generally misunderstood in the past, is that legal technicality which deprives the Board of the right to revoke licenses of any physicians licensed prior to July 1, 1899. A law is now pending in the General Assembly, and gives promise of passage, which will restore to the Board jurisdiction over all licenses. What this will mean in the control of unprofessional conduct is readily seen.

One other department of work, largely neglected in Illinois, and in which it is hoped the State Board of Health may engage effectively, is that of child hygiene. It is hoped that the Board may not only undertake useful measures in this direction, but that it may serve to co-ordinate and assist local agencies that are working for the physical and mental advancement of children.

In much the larger part of the State, in fact outside but a few cities having well organized health departments, the hope for early and material progress in the adoption of measures for better safeguarding the health and lives of the citizens of Illinois, rests, as I see it, in immediate promotion of close co-operation between the various county and city medical societies, the women's clubs, the various civic welfare associations and the State Board of Health.

That such co-operation can be readily developed has been proven recently by the very general response of the county medical societies to a request from the State Board of Health, inviting them to lend aid in promoting an educational campaign for better registration of births and deaths. To an invitation addressed to the secretary of every county society, we received seventy-two replies and engagements to the number of 356 for showing our educational film in motion picture houses. The result of this one effort was regarded as especially significant of great possibilities by the State Board of Health.

Perhaps, when we have this co-operation and co-ordination of effort, all working in one direction, the tragically grotesque occurrences in public health administration will be less frequent. In one Illinois city, where a peculiarly severe epidemic had awakened the community to the need of public health activity, the employment of a health officer was decided upon as the first step. But in spite of the severe lesson the community had already received; in spite of protests of physicians and intelligent laymen; the public health destinies of the city were finally entrusted to a veterinarian and not to a physician or sanitarian.

In another community, where typhoid was prevalent, the board of health was notified, as is the custom, of the rules and regulations of the State Board of Health relative to that disease. The result upon the public health organization of the town was disastrous. Immediately upon seeing that a penalty was imposed for the failure of the health department to perform its duties, the board of health resigned as a body.

These are but passing examples of the stumbling blocks in a program of sanitary progress. All this will be cleared away by co-operation and vigorous popular education.

Finally, the State Board of Health must meet two definite propositions:

It must be in fact a central agency for the collection and dissemination of up-to-date information of service to health officers and others interested in the promotion of public health and it must cover the entire field of public health.

Second, the Board must be prepared to supply counsel and advice in matters involving expert skill and knowledge. With such service it will save the various communities of the State thousands of dollars annually and will perform the infinitely greater service of reducing the sum total of human death and suffering of the people of Illinois to within something like reasonable limits.

SOME INFECTIONS OF THE HEAD AND THEIR CAUSES.*

J. SHELDON CLARK, M. D.,
FREEPORT, ILL.

It is an old and trite saying that "nothing succeeds like success." In this day and age he who wishes to succeed must needs have at his command a storehouse of physical energy of unlimited supply. How often do we see men who have prepared themselves at great expense of time and money for a chosen vocation and no sooner are they entered upon it until they are obliged to lay down their work on account of some physical incapacity.

It is in early life that most of the damage to our bodies occurs, and the port of entry is mainly the head. It is high time that this question of physical development should be considered by those who have to do with the welfare of the child. Boards of Education, and the system of teaching prevalent in our schools, have treated the child's head as though all it contained were a protoplasmic mass that is to be moulded and fashioned to suit various whims and fancies.

*Read before the joint meeting of the Medical Societies of the Counties McHenry, Kane, Winnebago and Stephenson of Northern Illinois, held at Rockford, Ill., February 9, 1915.

Our pedagogues must be reminded that there are structures in the head that if diseased, may in turn affect the whole organism.

One of the most important deviations from the normal, in so far as the head is concerned, is that found in mouth breathers. Any child who breathes through his mouth rather than his nose, does so either on account of nasal obstruction or from force of habit. Habit mouth breathing may follow some sudden stoppage of the

Figures 1 and 2.

nose; as from an acute cold in the head, or it may result from the desire to be continually talking, as is seen in some children.

What then occurs from this habit of mouth breathing? First and foremost there is a lack of symmetry and the proper development of the body. Not alone the head, but the chest, heart and other organs. When a child breathes through the mouth, the tongue does not lie against the hard palate, neither does it press outward on the arches of the jaw, but it lies loosely in the mouth. The lack of this outward pressure and upper force of the tongue just mentioned, causes the upper jaw to be tardy in its development and, in fact, it does not attain the dimensions it should have. The teeth attain their ordinary size and number and must be placed on a jaw that is shorter and narrower than it should be. The lower jaw, however, develops in a nearly normal degree.

From this derangement of the teeth we have two varieties of deformities—either the upper teeth overhang, or the ones of the under jaw protrude. The upper teeth should normally overlap slightly in closing the mouth, but where they do to excess and, combined with a retreating lower jaw, we have then the picture of the characteristic facies known as the "rabbit mouth."

In the second variety, where in addition to stuffiness of the nose, there is obstruction at the base and sides of the tongue, caused by very much enlarged tonsils, then the lower jaw is drawn downward and forward by muscular action in order to clear the mouth and fauces, and we have the type known as "wapper jaw."

From an economic standpoint it is hard to estimate the cost of the damage that is done by reason of this one common defect, viz: mouth breathing. There is lessened physical and mental capacity and resistance to the various infections of the mouth, nose, throat, ear, bronchi and lungs is very much lessened. In mouth breathers the inspired air is not properly filtered and thereby a vastly greater number of bacteria gain entrance to the nose, mouth and throat, causing frequent local and general infection.

There are many causes other than pathological ones that make for malocclusion of the teeth. We might speak of hereditary tendencies, influences brought about through a faulty diet, both as regards bottle-fed infants and irregularities later on in childhood, such as too much of the sweetmeats, etc. Then the various traumatisms that are ordinarily met with. One very frequent being that received through thumb sucking in infancy; also the numerous falls in infancy, wherein the tooth germs are damaged. The case here shown in Figures 5, 6, 7 and 8 is fairly representative of what effect heredity plays in development. The model of the upper jaw

shows a perfect dentition (Fig. 5), while the model of both the upper and lower jaw (See Fig. 6), shows a perfect alignment. However, one will see that these perfect teeth are not in keeping with the general facial development of their possessor. (Figs. 7 and 8.) There is an eugenic cause for this inequality of relationship between the general facial development and that of the jaws and teeth; there being a great disparity in the anatomical development as exhibited in the parents.

In mouth-breathers the tonsils are habitually found enlarged and the seat of repeated septic attacks, along with the tonsils the entire structure known as Waldeyer's ring is involved in an attack. This includes the pharyngeal tonsil or adenoid structure in the naso-pharynx, the pharyngeal and lingual tonsils. Most of the attacks of sudden rise in temperature upon slight exposure to cold are caused by infection somewhere in the lymph structures comprising Waldeyer's ring.

Of the general systemic infections more easily acquired on account of physical abnormality and consequent impairment of general bodily tone, is tuberculosis. Most of the tubercular subjects who die at the age of 18 to 40 have secured their initial tubercular infection during childhood. Had they been normal as regards their capacity for intake of air there is no doubt but that they might have overcome the primary infection.

Rheumatism is one of the diseases that is most largely contributed to by oral sepsis of one sort or another, and in this we would include the other structures connecting with the mouth, as the nose and its accessory sinuses and the ears. I have seen remarkable subsidence in an intractable case of rheumatism follow the extraction of some old snags of teeth that were bathed in pus.

Mouth breathing has a further retarding influence upon the development of the nose. The growing child sleeps from eight to fifteen hours during a day. If, during this time, he lies with the mouth open, then the pressure that is normally exerted against the upper jaw is lacking, and there is not the normal widening of the jaw. This in turn affects the development of the nose, in that the vomer is pressed upward and out of place by the high arching of the palate. As a consequence there are irregularities within the nasal chambers, enlarged and turgessed turbinals, deviations of the septum, etc. Now, if the nose were normal and we breathed as we should, the air would be sifted mechanically of its impurities and we would not be subjected to the repeated attacks of cold in the head, that do so annoy.

Continued turgescence of the turbinals may lead to their degeneration, and in turn an infection of the ethmoid cells with a concomitant

Figures 3 and 4.

asthma that makes living almost unbearable. Along with this the sense of smell is very much obtunded or is lost altogether. Many of our foods are palatable to us mainly on account of their delightful odors. With the sense of smell gone, the appetite wanes and physical stamina also diminishes with the lessened intake of food.

Along with infection of the ethmoid cells, usually the sphenoid sinus, the frontal sinus and the maxillary sinus become involved. The middle

ear and mastoid cells may be infected by way of the Eustachian tube. One of the greatest complications attending infection of the ethmoid labyrinth and sphenoid sinus, is that of optic neuritis, caused by infection gaining entrance to the sheath of the optic nerve. The optic nerve in its course through the optic foramen courses along the outer wall of the sphenoid sinus and the lateral wall of the last ethmoid cells. If this condition is allowed to persist, blindness may result. At other times, in acute attacks of cold in the head, a patient will complain of pain in and about the eyes, when it is not the eye or structures of the orbit that are affected, but rather the ethmoid cells that lie on the inner wall of the orbital cavity.

The frontal sinus is infected from below. The drainage of the frontal sinus is not of the best when once its structure becomes the seat of septic inflammation. The sinus early becomes closed off and there results an absorption of the contained oxygen; this results in decided pain over the frontal region, even though there may be no decided infection.

The antrum of Highmore is a large cavity within the upper maxillary bone that is connected directly with the nasal cavity through its normal opening which lies in the middle meatus of the nose. Infection of the antrum takes place either from the nose or from the mouth. Perhaps the greater part of the infections take place from the molar teeth. It is infection in the molar teeth which protrude within the antrum that gives rise to most of the dental infections. Pus in the antrum, in an appreciable quantity, gives rise to a pain and swelling that is characteristic. Therefore, the best prophylaxis looking to the eradication of antral disease is oral cleanliness and thorough dental supervision of the teeth.

Through the Eustachian tube we have another way by which oral infection travels. Most of the diseases of the middle and internal ear are caused primarily by some trouble in the mouth, nose or naso-pharynx. One quite prominent factor in producing acute otitis media, is the manner of blowing the nose that is indulged in by some people. You have all seen it. The possessor of an acute rhinorrhea will blow both nostrils in perfect unison, and with a clarion tone that would relegate the trumpet of Gabriel to a seat in the back row of the celestial orchestra.

With infection of the middle ear there is a resultant inflammation that at first is serous, then hemorrhagic and later purulent. It takes but a few hours for the entire process to be developed. Ear-ache is a warning to one that there is trouble in the middle ear. In all such cases one should not prescribe "drops" for the ear without first having examined the drum membrane and be cognizant of the pathology going on in the middle ear. A few hours may

Figures 5 and 6.

mean a great deal to one suffering from acute otitis media. A timely paracentesis of the drum membrane will cut short the duration of the trouble, prevent pus formation and the possibility of antral and mastoid cell involvement.

The loss of hearing is also quite an important factor. In recent years we have heard a great deal regarding the conservation of vision, but very little has been said with reference to a plan for the conservation of hearing. Of the two ailments, I believe those unfortunates who

cannot hear or are very much afflicted with impaired hearing suffer more than those who are afflicted with poor vision or loss of eye sight altogether.

We have all seen children that are more or less troubled with a discharge from the ears. This trouble is looked upon by many as a matter of course. The public is being educated and the doctor must keep abreast with this education and not allow his cases of infections of the middle ear to go on to suppuration, without any notice other than the use of "ear drops" to alleviate the pain. As was said before, the early puncture of the drum membrane must be done, and you will be surprised at the ready healing, instead of the weeks, months and maybe years of discharging pus that may take place from ears in neglected cases.

the crypt. We, therefore, feel that a similar lesion is present in the tonsillitis preceding rheumatism and, as far as we know, this lesion differs in no way from that of acute lacunar tonsillitis. We regard the ulceration of the lining of the crypts as being the vulnerable point of entry of organisms from the mouth. It matters little, apparently, what organisms from the mouth have produced the lesion, for once the ulcer has formed, it is possible for any type of organism to gain access to the deeper tissues.

In regard to the removal of tonsils for supposed systemic infection we should be careful and make our diagnosis on good tenable grounds. Just because we happen to have before us a throat with tonsils protruding a considerable distance beyond the pillars, is not sure evidence that they are the source of trouble and of danger to their possessor. In looking for the cause of septic infection, do not forget the teeth, the nose,

Figures 7 and 8.

When we consult the statistics of brain abscess and find that in over 80 per cent the abscess in the brain is of otitic origin, then we may well regard with more concern these cases that in the beginning are only that of ear-ache following an acute cold in the head.

Let us for a moment study a little more closely the subject of tonsillar infection.

Dr. MacLachlan of the University of Pittsburg was reported at the 1914 meeting of the American Medical Association to have examined into the histopathology of 350 pairs of tonsils that had been removed for various reasons and makes the following statement:

We have observed that when symptoms of acute tonsillitis are present, there is always a pathologic basis, as shown by the ulceration of the lining of

and its various sinuses and cells, the ear, the tear sac, the appendix, the gall bladder, or even an ingrowing toenail. Any one or all of these can be the source of the trouble.

Dr. John F. Barnhill of Indianapolis reported a case to the point at the Atlantic City meeting of the A. M. A. in 1914. A certain college professor had been so ill with heart disease for a long time that he could not carry on his work. He came into the hands of Dr. Osler, who went over him again and again and finally said, "Your tonsils are the cause of all your trouble." Dr. Osler advised that the patient be operated on thoroughly, but the tonsils were merely clipped. The illness continued over a period of two years. Dr. Osler had gone abroad and the patient consulted Dr. Janeway of New York,

who, after careful examination, told him the same thing. Then the patient's tonsils were completely enucleated and from that time on he recovered promptly and remained well.

Just the past week I was called in consultation on an interesting case of continuous and persistent rise in temperature as exhibited by a dentist living in a nearby town. This man had been for several weeks feeling more or less "done up," as he expressed it. He was tired, lacked energy to go about his work, and had noticed that he was carrying an unevenness of temperature. He entered the hospital for observation. Careful record of temperature was kept, and he was gone over from stem to gudgeon, with blood counts, smears, Wassermann, and all that long host of laboratory inquisition. Nothing was found. He replied that he never had sore throat or attacks of tonsillitis, and to the ordinary observer he had an innocent-looking pair of rather submerged tonsils. However, the anterior pillars were quite reddened and upon retracting one of them I was able to introduce a large mastoid curette into a pocket that was filled with foul septic detritus. Cleaning out this and other pockets of septic material at once relieved him of his symptoms. Later on these enormous crypts will fill again, and unless he has attention paid to them he will once more be suffering from septic absorption. Such tonsils should be enucleated.

It has been within the past decade that the true relationship between focal infection and systemic disease has been worked out. The tonsils are, perhaps, the most frequent seat of infection of any organ of the body. It is hard at times to trace a nephritis, a rheumatism, an endo, or pericarditis, neuritis, or an hypertrophy of the thyroid to an infection in the tonsil, but nevertheless such is within the range of possibility.

It ofttimes happens that the systemic infection comes on months after an acute attack of tonsillitis, and there is no connection made between the tonsillar infection and the latent disease. To recognize these cases is often difficult and at other times easy. Retained pockets of pus, detritus in the crypts, and in the supra-tonsillar fossa and behind the pillars of the fauces, account for the periodic attacks of septic inflammation with the concurrent symptoms of systemic disease.

The submerged tonsil, the one that on cursory examination does not extend beyond the pillars, is the dangerous one. Aside from interference with breathing and phonation, the enlarged tonsil is not altogether the one to fear. In fact, the size of the tonsil has practically nothing to do with the liability to septic infection. The most innocent-looking tonsil may be the cause of periodic attacks of mild illness, with fever and general symptoms of infection.

Regarding the tonsil operation: Hudson Makuen of Philadelphia, an authority of recognized ability, says: "Few of us will doubt that the tonsil is one of the sources of systemic infection, but is there not a possible danger in the frequent reiteration of this fact?" The tonsil operation, in his opinion, is already too popular. He says that some of us do the operation for the simple reason that "if we don't do it some other fellow will." Another thing that makes the operation too popular is the teaching and the information given out that the removal of tonsils is an easy matter and that it can do no harm. As to the ease with which the operation can be performed: I have time and time again heard general surgeons make the statement that they would rather remove an appendix or drain a gall bladder than remove tonsils, and yet they will go ahead and chop off a part of the tonsil, get a severe and at times almost uncontrollable hemorrhage and charge ten or fifteen dollars for their trouble. Tonsillectomy is not an operation for the office, but should be done at the hospital where one is supported by the proper surroundings for doing surgical work. When one essays to take out tonsils in one's office the result is about as follows: A child, for instance, is most improperly and tenderly held by his parent or relative. He is so arranged that his legs and arms are working in true battering ram fashion. The patient may hold fairly still for an operator to use the guillotine and get off about one-half of the tonsil on one side and a miserable specimen of the other. The whole scene is one of confusion and disorder and the impression made, both on the patient and the observers, is one that does not redound to the surgical skill of the one who attempts tonsil work after this fashion. I know that such work is being done for I have

repeated instances where little ones are brought to me for secondary operations. The report being, in most instances, that the tonsils have grown again, and this time they are to be taken out "by the roots."

In regard to the harm that may be done in this matter of the removal of tonsils: That there is harm done no one will deny. First, as to the age when one may with a clear conscience advise tonsil removal. Dr. Joseph C. Beck has stated that he has noticed that where adenoids, and tonsils are removed in children under three years of age that there is an undue amount of fat produced and the children develop in a manner that would suggest disturbance of the internal secretions. It is the accepted opinion among laryngologists that tonsils or adenoids should not be removed before the fourth year of age.

Second, when one essays to do a tonsil operation, let him be thorough with his work. Attacks on the tonsil that result in the removal of only a part of the substance of the tonsil had better never have been begun. Again, I have seen throats in which the most utter disregard to normal structures had been shown. Uvula cut off, anterior and posterior pillars gone and the whole throat dry and looking as though a German 42-calibre siege gun had been somewhere in the neighborhood. Instead of a tonsillectomy having been done, it was rather a pharyngotomy.

In public speakers or singers one must be very careful in the work so that there are no constricting bands that will later alter the shape and contour of the muscles of the larynx. Again in the case of singers or public speakers, we must remember that these people have learned their art with their physical imperfection present, and if we alter this relationship, then we are apt to have a change in the tone production by reason of our surgical interference. It is by doing a clean enucleation within the capsule that we are rewarded with perfect phonation subsequent to tonsillectomy. Let us, therefore, follow the anatomical line of cleavage between the tonsillar capsule and the deeper structures; thereby placing this operation on the highest surgical plane, instead of the indiscriminate bungling that is too frequently indulged in.

The models used here were kindly furnished by Dr. Harry C. Puckett of Warren, Illinois.

76 Stephenson Street.

BLOOD PRESSURE IN GENERAL PRACTICE.*

N. T. Stevens, M. D.,
CLIFTON, ILL.

By blood pressure is meant the arterial tension or pressure of the blood in the vessels within which it is contained.

Blood pressure is divided into the maximum or systolic pressure and the minimum or diastolic. The systolic is the greatest pressure exerted and takes place during systole of the heart; the diastolic is the lowest pressure and occurs in the cardiac cycle, just at the beginning of the systole, the time when most of the blood has passed on through the capillaries into the veins and from these we obtain pulse pressure, which is the difference between diastolic and systolic pressures.

The importance of blood pressure has become prominent from a practical standpoint only in the last five or six years, and real value of actual blood pressure readings in their diagnostic, prognostic and therapeutic application to general medicine has begun to be appreciated and their value realized by the general practitioner.

When should the general practitioner measure blood pressure?

(a) In the first examination of every patient.

(b) Occasionally for watching the progress of cardiovascular disease and nephritis.

In a paper on diagnosis read before the Michigan State Medical Society, Dr. Richard C. Cabot says: "The next procedure following my personal routine is the examination of blood pressure." He considers the blood pressure machine the most important of all the resources that have been added to our armamentarium as physicians in the last fifteen years.

There are two methods of taking blood pressure:

1. The old or palpation method.
2. The new or auscultation method.

Of the first I will say nothing, as it is becoming obsolete and cannot be depended upon to give accurate information. The second, or auscultation method, is the one that is now universally recommended to be employed for both systolic and diastolic determination.

In the choice of an instrument for accuracy

*Read before Iroquois-Ford Medical Society, March 2, 1915.

and durability, the mercurial sphygmomanometer is preferred to the aneroid.

It is necessary to understand, where there are no pathological changes present, the following factors affecting the blood pressure readings:

It is important that the constricting cuff be on a level with the heart, otherwise the correct reading is raised or lowered by the effect of gravity on the column of blood. The position of the patient in relation to the horizontal is also important, systolic pressure being from 8 to 10 millimeters higher in the reclining than in the sitting posture. There is about the same difference between sitting and standing postures.

The main point is therefore to always take subsequent readings on the same patient in the same posture when possible, at the same time of day, and preferably between meals. There is a moderate rise in systolic pressure and pulse pressure after meals and the pulse rate is increased. During sleep the maximum pressure is lowered 10 to 20 millimeters, due to relaxation and vasodilation.

Exercise, excitement and altitude are all factors which cause a marked rise in blood pressure, even when there are no pathological conditions present; hence, in cardiac cases, where the heart is damaged or where arteriosclerotic changes exist, caution must be used in sending patients to a high altitude.

The time taken to secure blood pressure is an important matter, as too long compression of the artery will often cause an extra rise of 20 millimeters. The time taken to obtain accurate blood pressure readings should not exceed one or two minutes.

A simple and reliable method for obtaining the systolic and diastolic pressures is as follows:

The stethoscope is placed over the brachial artery, while the arm band of the instrument is being inflated. The point where the heart sound ceases, the mercury going up, gives the systolic pressure and the point where the pulsation ceases, the mercury going down, gives the diastolic pressure.

Blood pressure depends upon four main factors:

1. Cardiac strength.
2. Peripheral resistance.
3. Elasticity of the vessel walls.
4. The volume of blood.

As can be easily understood, the maximum or systolic pressure approximates the intraventricular pressure, while the minimum or diastolic pressure represents the peripheral resistance. The pulse pressure, or the difference between the two, represents the head pressure, driving the blood on out through the arterioles.

Various estimates have been given for the normal range of pulse pressure, but different authorities agree that the pulse pressure is 35 per cent of the systolic reading, where a normal balance is present and the diastolic pressure 35 per cent less than the systolic.

The pulse pressure is of the greatest value in determining the condition present, whether due to heart or arteries, and is most important in relation to treatment. If the systolic pressure approximates the diastolic pressure, making a small pulse pressure, it is a clear indication of failing circulation. This condition, if continued, would cause the systolic and the diastolic pressure to become the same, at which point there could be no blood pressure and therefore no circulation of the blood.

The main point to be remembered is that the pulse pressure means the reserve power of the heart after overcoming all the opposing forces in the circulation of the blood through the arterial system and for this reason I consider a clear conception of pulse pressure and its meaning as of the utmost importance in blood pressure readings.

It is necessary to remember the fact that continued high pressure cannot be maintained without cardiac hypertrophy and that the increase will of itself cause changes in the vessel wall.

Cases of hypertension are rapidly becoming more frequent, due in a large measure to the increase and strain of business life and the associated conditions of overindulgence in food, especially protein food, too rapid eating, the drinking of too little water, too little healthful exercise, the use of undue mental effort—in a word, the lack of good hygiene.

Hypertension is often in the beginning primary and purely a spastic condition, unaccompanied by organic changes. These cases are nearly all due to toxemia and can and should be relieved by proper elimination and avoidance of mental and physical overwork.

These cases would often be detected if a

routine taking of blood pressure were practiced and further damage prevented by proper prophylaxis. Even after organic changes in the arterial system have been caused there is still in most cases some spasm by the relief of which the development of more vascular changes are prevented.

I will now turn to some of the more common conditions in which hypertension is associated with pathological conditions and not a primary condition of itself.

Angiosclerosis. This term describes a rather common class of patients who have a permanently high blood pressure with no signs of sclerosis or nephritis. Their discovery is very important in order to prevent cardiac hypertrophy and vascular changes. Here it is important to regulate diet, eliminate overwork and worry, keep the intestinal tract open and the bowel function active, as many of these cases are partly due to autointoxication. Sweating is also of value in these cases.

Arteriosclerosis. This condition is the result if continued high pressure tension is accompanied by high blood pressure. Pure senile arteriosclerosis has no associated hypertension. Arteriosclerosis is often associated with diseases producing high tension as nephritis and cardiac conditions, and the hypertension present in such cases is often due to the associated disease and not to the arteriosclerosis.

There is a class of patients who have had a high arterial tension, but owing to a marked myocarditis and, in some cases, cardiac dilatation resulting from the high systolic pressure in the early stages, the blood pressure becomes normal in height or even a little lower than normal.

These cases are more serious than when the tension remains high. A serious mistake might occur by considering such cases as in good health because the systolic pressure is about the normal level or lower. This error can be guarded against by taking the diastolic pressure, for while the heart muscle cannot maintain the systolic pressure, the peripheral resistance in the vessels, due to sclerosed condition of their walls, remains and maintains a relatively high diastolic pressure, giving a small pulse pressure.

Autointoxication. Here is often found a markedly elevated blood pressure. Headache and dizziness, supposed to be due to high blood pressure, very often disapepar with laxatives and diet and no change in blood pressure. Most of these cases have increased indican in the urine.

In aortic regurgitation the systolic pressure is from 75 to 100 per cent higher than the diastolic, the pulse pressure being very high.

In cardiac arrythmia there are many cases purely functional in character, but there are also a number with true organic disease. It is in these doubtful cases that blood pressure determinations are of great value. An irregular heart plus a high blood pressure is serious. The very same heart with low blood pressure may be of no significance.

Increased intracranial tension—apoplexy, depressed fracture of the skull, fracture of the base, Jacksonian epilepsy, intracranial hemorrhage—in these conditions the highest blood pressure readings occur. It should be remembered, however, that the high blood pressure is compensatory and is the effort to supply more blood against the increased intracerebral tension, and thus prevent anemia of the brain. The important point is not to bleed and try to lower the blood pressure, but to operate where possible, and where not to give atropine to paralyze the vagus and to allow the pressure to rise more rapidly.*

In head injuries the blood pressure reading is of great value, for in concussion the pressure is low, whereas in the above-named conditions it is invariably high, unless every late, when cerebral paralysis has developed.

Chronic interstitial nephritis gives a high blood pressure. Janeway says: Given a systolic pressure of over 200 millimeters, the diagnosis of contracted kidney must be disproved by repeated examinations before it is abandoned. In chronic parenchymatous nephritis the blood pressure is uncertain, often being normal. In uraemia the blood pressure often runs as high as 200 or 300 mm.

There are many cases of myocarditis not discoverable by physical examination. It is in these cases that blood pressure helps, not only to make the diagnosis but also to determine the extent of the disease.

Graupner gives a functional test for detecting myocarditis. Take the pulse rate and the blood pressure of the patient to be tested and then give a prescribed amount of exercise, as walking up a certain number of steps. Then take the pulse rate and the blood pressure every

*Nickolson.

five minutes. A normal heart will, during exercise, cause a rise of blood pressure associated with an accelerated pulse rate. The blood pressure and the pulse rate will remain elevated during the exercise, unless it is excessive or unduly prolonged. With a cessation of the exercise both blood pressure and pulse will in a short time return to their previous level, the pulse rate a little before the blood pressure.

In myocarditis, if mild, there will be an elevation of blood pressure and an acceleration of the pulse rate, but the blood pressure in a short time will fall below or to its previous level, while the pulse rate remains higher longer. In severe cases the blood pressure will fall from the start the pulse rate increasing, the blood pressure rising to its previous level only after a long time.

In pneumonia, where the cases are not alcoholic, if the systolic pressure expressed in millimeters of Hg is higher than the pulse rate expressed in beats per minute, the condition of the patient is good; when lower, the condition is serious.

In typhoid fever routine blood pressure observations are of great value. Normally we have in this one of the lowest pressures occurring in diseases. In hemorrhage there is a sharp sudden fall, due to a lessened volume of blood. In perforation just the opposite takes place. The irritation of the peritoneum causes a sudden sharp rise in blood pressure. This sudden rise will show the complication sometimes hours before any other definite signs of perforation. A lack of rise in blood pressure does not negate other signs as the vasomotor centre may be exhausted, but when high pressure is present it is reliable, unless pneumonia develops.

Hypotension is a symptom and not a disease and its treatment is that directed to the cause. It should be borne in mind that in a large number of cases, hypertension is a necessary compensatory process in order to maintain a correct cardiovascular equilibrium. This is especially true in advanced cases. Prophylaxis is most important and will become more frequently used as a routine taking of blood pressure becomes more prevalent.

Patients should be warned against chronic over-indulgence in food, more especially food having a large nuclein content, which forms excessive purin compounds, e. g., meats, liver, sweet breads, cured meats, sausage, cheese, veal, etc. Advise proper mastication, slow eating and the avoidances of excessive muscular exercise.

In senile hearts with hyper-tension it is of great value to give digitalis combined with a nitrate or iodide, as in these cases the high tension is the result of a venous stasis and a better action of the heart relieves the symptoms and lowers the tension.

NEW SANITARY ENGINEERING BUREAU OF THE STATE BOARD OF HEALTH.

(Continued from page 141)

eliminated through early attention to drainage conditions.

Close attention will be given to summer resorts, chautauqua grounds, fair grounds and construction camps, all of which are known to be responsible for the spread of communicable and preventable diseases when not properly supervised. The new bureau will also constitute a valuable means for collecting and rendering available information regarding city wastes collection and disposal, street cleaning, air conditioning, plumbing and various other sanitary matters of an engineering or a technical character.

Mr. Paul Hansen, engineer of the Illinois State Water Survey, has been engaged to assist Dr. C. St. Clair Drake in organizing the new department.

H-M-C IN CONFINEMENT

Speaking of "twilight sleep," *Ellingwood's Therapeutist* points out that the patient passes through a very short labor, with so little pain that she subsequently forgets it and declares that it is the only method for the expectant mother, labor progressing with so little muscular irritation that in many cases there is almost no pain, and where pain occurs, it is so transient that the patient has no complaint to make.

Referring to these statements, Dr. B. L. Robinson, in a communication to the same journal, declares that "all that can be desired in this direction can be accomplished by Abbott's H-M-C tablets. I have used them," continues this correspondent, "ever since they were put on the market. All cases do not need them; in none should they be used indiscriminately, but in properly selected cases and at the proper stage of labor they are all that can be desired. I can't describe the satisfaction, both to myself and to the mothers and families."

ILLINOIS MEDICAL JOURNAL

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Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

AUGUST, 1915

Editorials

ANTITYPHOID VACCINATION.

At this season of the year frequent reports of typhoid fever are heard. Occasionally an epidemic is reported from certain localities, and in nearly all communities a few cases occur. A little carelessness in handling a case of typhoid frequently is the cause of spreading the infection to other members of the family or of the community. Fortunately there is a preventive which is not difficult to obtain, is harmless and is approximately positive.

Antityphoid vaccination is not in the experimental stage, having passed that degree with its use in the United States Army. No person of intelligence can read the various reports of its use, especially the reports of the United States Army, and not be convinced of the prophylactic value of this vaccination.

The reports of army medical officers concerning its use in the army when the troops have been mobilized in typhoid infested districts are marvelous. Scarcely a case has developed in our troops mobilized in Texas and Vera Cruz during the last two years, where vaccination has been employed. A very few cases were reported by the army officers after vaccination, but the failure to protect was supposedly due to inefficient vaccine. Of these soldiers having typhoid but two died (1912), indicating that the vaccine at least modified the course of the disease.

How different were the reports from our armies during the Spanish-American disturbance, when over twenty thousand cases of typhoid were reported.

The state now furnishes free antityphoid vaccine, and physicians may secure it at any of the distributing stations or by application to the State Board of Health.

In Chicago each summer are reported cases of typhoid following vacations spent at various summer resorts or country outings, due no doubt usually to polluted water. We think all physicians should urge this vaccination to all his patients contemplating a vacation trip. All persons having an exposure to typhoid infection should be vaccinated at once.

We frequently find people unwilling to have vaccination because of fear of the reaction. There need not be any fear, because the reaction is mild, except in a very few cases, usually only a local mild inflammatory area with slight fever for a few hours. No serious trouble has been encountered, and no mortalities.

The period of immunity has not been determined accurately, and of course varies in individuals. Four years is supposed to be near the average period of immunity afforded by vaccination.

THE EASTLAND DISASTER.

Another crushing, criminal accident has befallen the pleasure-going folk of Chicago. Approximately one thousand people have lost their lives by the foundering of the Eastland. We call it an accident, but it is extremely doubtful if as mild an expression is within the bounds of truth.

If newspaper reports are true, the boat was originally licensed to carry less than two hundred passengers. Later, because the boat was not paying, the license was altered so that she might carry several hundred more, provided the boat did not go beyond a five-mile shore limit, or in water sufficiently deep to submerge the

vessel. Still later she was licensed to carry 2,500 passengers, and other restrictions removed.

It seems also from these same newspaper reports that the vessel had numerous previous accidents, and that the government inpectors had been advised that she was not a safe seaworthy craft, and by persons whose opinion was worth listening to. Also these reports have it that a citizen reported to the United States Inspector the violation of rights by another one of our over-crowded boats, and was informed he might be fined several hundred dollars if the complaint was pushed. We do not know if all these reports are strictly true, but there are so many of them apparently authentic that it is difficult not to believe them.

It is common talk that many of our excursion boats—short trip boats—are generally much overloaded, and this all permitted by government inspectors.

There is little doubt that the inspectors knew this boat was unsafe. There is little doubt the officers of the company knew it was not only unsafe but was absolutely dangerous. Yet for the sake of a few dollars would sacrifice human life by the hundred.

It is to be sincerely hoped that the responsibility will be placed where it belongs, and that the persons who are responsible for these deaths will be given a long opportunity of solitude in which to consider the heinousness of their crime.

OPTOMETRY BILL BECOMES A LAW.

After years of persistent fighting, the optometry bill was passed by the legislature and signed by the governor. This undoubtedly was the most unfortunate act of the last legislature, so far as the medical profession was concerned. It is to be regretted that the governor, who, generally speaking, has been fair to the medical fraternity, did not veto the measure.

After all is said, however, the profession did not deserve better than they received. It is a strange fact, that when a vicious measure is before the legislature, when we physicians know it is before it and that large sums of money are being expended to pass such measures, that it is impossible for the public relation committee or the legislative committee to receive support from the profession.

The ophthalmologists, who of the profession are the most affected, showed a remarkable indifference. Aside from the work of the legislative committees, almost no opposition was shown by the profession this session, to this obnoxious measure. The passage of the bill has opened the bars to another class of practitioners.

During the few days elapsing between the time of the passage of the bill and the time the governor's signature was attached, petitions were circulated, skillfully worded, appealing to the governor not to veto the bill, and these petitions were presented to the doctors, and *were unwittingly signed by doctors.*

What is of far more importance than the annoyance to the profession, will be the practicing of medicine, and particularly of ophthalmology by a set of practitioners totally unfitted or untrained for the work, and the people will pay the price, even to the dimness of their vision.

One of the remarkable things in connection with the passage of this law, was the persistence with which its supporters worked. They have been before several successive legislatures, and expended money without stint. We are informed (we do not know how truthful) that $120,000 was spent on the last legislature in obtaining the passage of this bill. Its supporters, we are told, were in the field constantly during the entire session. It is fair to presume that any measure which requires such expenditure of money for its passage, is at least in some measure a vicious bill, and should be defeated.

When the medical profession learns that some assistance must be given its legislative committees, if such legislation is to be defeated, then will we have better regulation of the practice of medicine.

DOCTOR CALDWELL HONORED.

On July 15 the Medical Fraternity tendered Dr. Charles P. Caldwell, former president of the Chicago Medical Society, a dinner in token of their esteem and admiration for him. About 250 covers were laid, but unfortunately these were not a sufficient number to accommodate all who were there.

Dr. W. O. Krohn, acting as toastmaster, by his anecdotes or ready wit, put all the speakers on their mettle, and it was an evening of pleasure for everyone who attended.

What little that was not known of Dr. Caldwell before, was widely known after the dinner. Among the speakers who told of Dr. Caldwell's sterling worth as well as of many anecdotes at the doctor's expense were, Drs. W. L. Noble, C. J. Whalen, A. E. Sterne, Judge McGoorty, Drs. Clara Seipple, A. C. Cotton, H. D. Singer, W. T. Mefford, A. A. O'Neil and J. A. Dawson.

Special music written for the occasion was interspersed throughout the evening.

The visiting doctors who were attending the convention of neurologists and alienists were invited, and Dr. Stern with his funny stories helped much to entertain the company.

In spite of all the mirth and merry making and fun of the funny stories, there was easily discerned an undercurrent of sincerity, which told plainly that all were glad to be there, because of their high regard for the honored guest.. This regard was further expressed by presenting to Dr. Caldwell a loving cup—Dr. I. C. Gary making the presentation speech.

With others who added pleasure by their presence to this festal board were Dr. Caldwell's wife and children and his gray-haired mother.

The occasion will be long remembered by the fraternity of Chicago, all of whom wish Dr. Caldwell all happiness for many years.

ACTIONS FOR CIVIL MALPRACTICE.
ELEVENTH ARTICLE.

ROBERT J. FOLONIE, LL. B.,
CHICAGO.

The layman has acquired a considerable knowledge in late years of antiseptic precautions to be used in performing operations and a misapplication of this knowledge may frequently cause claims of malpractice.

The case of Dr. C. Patient had a dirty lacerated wound of the fore-finger, caused by its crushing between two dirty pieces of iron. The distal phalanx was amputated and a subsequent progress of the infection caused a practical loss of the arm before it could be arrested. The preparation for the amputation was made in an adjoining room where the instruments were boiled on the stove, but this being done out of the presence of the patient, he assumed it was not done at all.

Suit was brought and the case tried on the assumption that the instruments were not sterilized, and that this was necessarily the cause of the septic condition of the arm. The fact that the injury was originally an infective one was passed over as of no importance. Claim was made, among other things, that the finger should have been amputated—"higher up beyond the point of infection." Had the amputation been greater, claim would doubtless have been made that the operation was unnecessarily extensive and therefore negligent. In such a situation it is impossible for the physician to treat the patient so as to be certain that a claim of malpractice will not be made.

It is useless to attempt to avert a malpractice claim or suit when logic is abandoned and the relation of cause and effect is assumed, instead of being established.

Instead of an approach to such claims with an open mind, with a view to ascertaining whether fault in fact exists and what relation, if any, it bears to the complained of results—it seems to be the misfortune of physicians that such claims are assumed to have a basis and all the ill-results of the disease are attributed to the treatment.

That such an attitude should so peculiarly exist in this class of cases I am at a loss to understand, unless it is that the egotism of every man is such that he regards his own body as inherently sound and impregnable to disease as his own constitution is so strong and withstands and overcomes disease so readily that if ill results follow, they must be due to interposition of some outside agency. This attitude has this much real basis: That the natural condition of the human body is that of health, and that a state of disease is attributable to some violation of natural laws. It is not so commonly recognized, however, that this violation of nature's laws may be by the patient himself or even by his ancestors and it is to be doubted whether the psychology which impells these cases can be entirely eradicated by any degree of education, but there is no doubt that the evil may be lessened by the very causes which now produce many such suits, namely, an education of the public.

The present superficial education is productive of ill, but, if carried further, it must necessarily be productive of good.

A MEDICAL COURSE IN TUBERCULOSIS.

During the month of September, a complete course in tuberculosis will be given at Rush Medical College by Dr. John Ritter and associates. This course begins on Monday, September 6, at 9 a. m., covering a period of 21 days, or until the 29th, inclusive (daily from 9 to 4, excepting Sundays. The course consists of daily lecture, clinic and conference from 9 to 12, the afternoon of the first week laboratory instructions, such as chemical and microscopical examination of sputum, blood pleural exudate, etc. Post mortem examinations and the study of pathological specimens the second week, to be followed by a study of tuberculosis in its various forms at the bed side at the different sanatoriums, hospitals and dispensaries in and about the city. The course is open to practitioners, advanced medical students, nurses and all who wish to bring their knowledge of this very important topic up-to-date. For particulars write Mr. James A. Harper, Registrar, Rush Medical College, 1748 W. Harrison St., Chicago. Telephone West 113.

ANOTHER BAD BREAK.

The elaborate post mortem findings published in the July JOURNAL in Dr. Whalen's article on "Carcinoma of the Omentum" should have been credited to Dr. Edward C. Rosenow. Our attention has been called to the omission of a footnote crediting Dr. Rosenow with the work.

TUBERCULOSIS NOTES.

Life Savers in Tuberculosis:
Honest Physician.
Sanatorium Care.
Fresh Air.
Sunshine.
Good Food.
Rest.
Pluck and Persistency.

The Crusader.

It is stated that about 25 per cent. of cases of tubercular cervical adenitis develop pulmonary tuberculosis when not operated upon. Of those operated upon only about 3 per cent. develop pulmonary tuberculosis.

For surgical tuberculosis the Roller treatment gives great promise of success.

Climate does not cure tuberculosis. It is the fresh air associated with climate that is absolutely necessary for cure.

1913 had a tuberculosis death roll of 143,000 in the United States.

Isolation of tuberculosis patients should be insisted upon in hospitals, asylumns and public institutions.

Dr. Theo. B. Sachs of Chicago has been elected president of the National Association for the study and Prevention of Tuberculosis.

Forty to 90 per cent. of all deaths from tuberculosis in the western and southwestern states are of natives of other states, who migrated there for their health.

THE ALIENISTS AND NEUROLOGISTS.

The interest shown in the recent meeting of Alienists and Neurologists of the United States, held in Chicago, July 12th to 17th, under the auspices of the Chicago Medical Society, demonstrates the growing necessity for such a conference.

The attendance was not as large as that of last year, due to the fact that it was not advertised, but the interest and sincerity of purpose was more marked.

Aside from the scientific program, resolutions for the information and education of the public, of the causative forces which produce insanity, mental defectives, criminals and other socially incompetent were passed. As it is necessary for the co-operation of the public, the public being made acquainted with conditions will cheerfully lend its assistance and help to further these ends, and will by social science remove, at least to a limited extent, these offending factors.

The clinics held this year added much to the interest and value of the meeting.

The October issue of the JOURNAL will be given to the papers read at this convention, and we hope prove of interest and value to our readers.

It is the purpose at present of the Chicago Medical Society to hold the meeting another year. Those interested in social welfare should arrange to attend the next session.

Any kind of filth in which you find maggots is fly-breeding filth—maggots turn into flies.

What does it profit a man to have a good time for two weeks and then come home and go to bed with an attack of typhoid fever? Verily, not much.

Public Health

OSTEOPATHS AUTHORIZED BY U. S. TO PRESCRIBE MEDICINES IN ILLINOIS.

On or about August 2, the collectors of internal revenue throughout the country received the following notice of a decision of the Treasury Department over the signature of David A. Gates, the Acting Commissioner in Washington:

That portion of the paragraph, headed "Registration, who eligible for," of Treasury Decision No. 2172, which reads: "An osteopath, therefore, or other person heretofore administering these drugs, if not classed as a physician in the state in which he resides, would not be permitted to register under this law," is hereby revoked.

Osteopaths, therefore, should be permitted to register and pay special tax under the provisions of the Act of December 17, 1914, provided they are registered as physicians or practitioners under the laws of the state and the affidavit is made in application for registration on Form 678, as required by Treasury Decision No. 2215, of June 10, 1915.

On receipt of this information, Dr. Drake, secretary of the State Board of Health, wired the following to the Acting Commissioner, seeking to avoid an unfortunate situation in this state:

Medical practice act of Illinois licenses osteopaths as other practitioners and specifically prohibits them from using drugs internally or externally or performing surgical operations. To avoid complications in this state would suggest that collectors be advised osteopaths not eligible to register in Illinois, under treasury decision twenty-two thirty-two. Only physicians and doctors authorized to practice medicine and surgery in all their branches should be registered under treasury decision twenty-two thirty-two. Be kind enough to advise me of action taken.

This morning (Tuesday) the following came in answer to above telegram:

Answering your wire this date, treasury decision twenty-two thirty-two promulgated only after thorough consideration of narcotic law by law officers of department and no other construction deemed warranted by language of statute, therefore the instructions to collectors suggested by you cannot be issued.

Evidently, the federal authorities intend to issue certificates to osteopaths, which this class of practitioners will construe as entitling them to prescribe or administer narcotics, regardless of the state statute, which specifically prohibits osteopaths, or "other practitioners" as we style them, from prescribing or administering drugs internally or externally.

Publication of this decision without qualification will, of course, lead to wholesale registration by osteopaths and to wholesale violation of the Illinois medical practice act.

It will also lead to wholesale prosecutions by the state authorities for such violations.

A considerable number of "other practitioners" and even some midwives have taken out registration papers. The plan is to "get the goods on" those who have registered, who have no legal right to prescribe or administer drugs or medicines, and to vigorously prosecute them.

The registration lists in the offices of the Internal Revenue Collectors afford good leads to violators of the medical practice act. In this respect, at least, they serve a good purpose.

The above information came to hand while the JOURNAL was on the presses. Editorial comment reserved.

NEW SANITARY ENGINEERING BUREAU OF THE STATE BOARD OF HEALTH.

Illinois, although the third state in the Union in point of population, has been the twenty-second state to establish an engineering department of the State Board of Health. However, such a department has now been organized on a substantial basis and great good to the public health of the state may be looked for through its activities.

Hitherto, municipalities and private corporations have without hindrance built unsanitary sewerage systems and furnished polluted public water supplies. Such offenses not only affect local public health, but constitute foci of infection throughout wide areas in this day and age of rapid transit. The State Board of Health is the only state department that can adequately deal with these matters and it is proposed through the new sanitary engineering bureau to scrutinize all projects for waterworks and sewerage, with special reference to their relation to the public health. Not only will the public health be benefited, but in many instances large sums of money will be saved by preventing unwise selections of sources of water supply and many evils of real estate speculation will be

(Continued on page 136)

Illinois State Medical Society

SECRETARIES' CONFERENCE.

Tuesday, May 18, 1915.

10:00 O'clock A. M.

Meeting called to order by the President, Dr. H. F. Bennett.

The President: In the absence of Dr. Carter, Dr. Henkel will act as secretary.

I will ask Dr. Henkel and Dr. Blackburn to constitute the nominating committee. They will present the names for president, vice-president and secretary at the conclusion of the program.

Our President is the first speaker, and will deliver an address. Dr. Brittin.

Dr. Brittin's address appears on page 81.

The President: Dr. Fiegenbaum has found it impossible to attend so we will have to pass to the next number.

For the first time in twenty-eight years Dr. Weis has been forced to miss a state meeting. We regret very much this honorable record must be broken now. However, the Doctor has forwarded his paper and it will be read by Dr. Ball. (Dr Weis' paper appears on page 107.)

The President: The next will be the County Society and the A. M. A., by Dr. Craig, of Chicago.

(No response.)

The President: We will hear from Dr. T. D. Cantrell, of Bloomington, on "A Recording System for County Secretaries."

Dr. Cantrell: *Mr. President, Ladies and Gentlemen:* This matter was brought home to me very forcibly when I took the books of the McLean County Medical Society some four years ago, which were being kept in the old method, each member occupying a page on the old style ledger. Some of them I found indexed, others were not. It required a long time to find out the number of active, paid-up members we had in the society and ascertain the number of delinquents. And the matter came home to me that a simplified method of bookkeeping for the county secretary could be very easily arranged, inasmuch as our entire income is once a year from dues. And so I tabulated our members into the form I have here (indicating) and I used a loose-leaf system.

When you lift the lid of the loose-leaf system the first thing that you come to is the "Receipts and Disbursements," and when a member pays immediately he is placed on the book as "Receipts," with the date of payment and the amount of dues, and at a convenient time they are posted on the tabulated ledger leaf, which is indexed in the loose-leaf ledger. It makes it convenient. On the tabulated form there is no date. If you want to look up the date the man paid his dues you will find it on the "Receipts and Disbursements."

There is nothing except figures to be written. The man's name in our books is typewritten, and the address, and 1915, and each year up to 1920 on the one leaf. That leaf will answer the purpose for six years. There is no rewriting of the name for a period of six years.

And then the members are numbered, you will notice, down in the margin, and that numbering will give you at a glance the number of A, B or C that you handle. Glance at the column of the year in which you are doing business and you will see in a minute the number that have not paid. If you have ten men on a certain page and two of them have not paid, in making your report to the state secretary it is a positive fact that you will get the matter right when you give the number of live and the number of suspended members, where if you are running through the old style system you will make many, many mistakes in that matter, and it causes an untold amount of correspondence with the secretary to get the matter corrected. I worked for a year to try to get the matter correct with Dr. Weis when I first went in, as to the live members for whom we had remitted, and then I did not get the matter straight until we had a new state secretary elected and he finally got his books adjusted until we agreed. We were three years getting the matter straightened out from the old style system. With this system I see no chance for anyone with ordinary skill to make any mistake as to the number of members that they have remitted for.

Then just back of the ledger leaves I have the blank leaves, just the blank page. The minutes are taken with a pencil at the time of the meeting and then the page is simply slipped out of the loose-leaf ledger, dropped into the typewriter and the minutes are typewritten, using care to put on the right upper corner the date, and if there is anything of especial interest involved, as a resolution amending the by-laws, or anything of that kind, it can be indexed in the first of the book as to the date, and it is very easy to find them. I place the new minutes on top of the old minutes; the old ones are deeper down all the time, and the fresh minutes are on top right in front of me when I open the ledger. Then when the ledger is full the leaves can be taken out and sent to a book binder and be bound in nice form and you have a permanent record, and you simply fill in your loose-leaf ledger with more blank pages and go on.

In balancing the books the amount of the receipts must balance with the amount of dues that are paid. It is only a minute's job to balance your books and see whether you have given every member due credit. If your receipts exactly balance with the credit that you have given your members, you know that your books are correct and that you have given each member due credit for all the dues he has paid.

This is simply a little matter I was asked to present here because some of my friends thought it might be of help to the secretaries of the different societies.

The President: "The County Medical Society Problems," Dr. Humiston.

Dr. Humiston presented his paper.

The President: "Problems of the Small Society," by W. C. Blaine. Is Dr. Blaine here? If not that concludes our program. These papers are now open for discussion. If there is no discussion we will proceed to the election of officers for the ensuing year.

The nominating committee have presented for president the name of Elizabeth Ball, of Quincy; vice-president, Dr. H. B. Henkel, of Springfield; secretary, Dr. F. Bondurant, of Cairo. What will you do with the report?

Moved and seconded that the report be adopted and that the secretary be instructed to cast a unanimous ballot for the preceding names. Motion prevailed.

The President: I declare them elected for the ensuing year.

If there is no further business, motion to adjourn is in order.

Voice: I move we now adjourn.

Whereupon the Secretaries' Conference adjourned.

MEETING OF SECTION ON PUBLIC HEALTH AND HYGIENE.

Wednesday, May 19, 1915.

9 O'clock A. M.

Meeting called to order by the Chairman, Dr. R. R. Ferguson.

The Chairman: The Section on Public Health and Hygiene will please come to order.

It has been the history of this Section during the past three years of its existence that at the beginning of the meeting all of those who are on for papers are usually present, and maybe one or two others, but as a usual thing before the meeting is over the crowd begins to come in, and the fact that these very important papers that we have today will all be printed in the JOURNAL makes it absolutely positive that these good papers will not be lost in any sense of the word.

I remember a year or two ago, when I happened to be on for a paper here, that Dr. Van Derslice was the Chairman of the Section, and he made me the "goat," in other words, he put my paper on first, and I am going to turn the tables on him and call on Dr. Van Derslice, of the Chicago Medical Society Milk Commission. He will talk to us on the making of a medical milk commission, and I assure you that Dr. Van Derslice knows the certified milk game from one end to the other, and what he does not know Dr. Campbell does. Dr. Van Derslice.

Dr. Van Derslice presented his paper. (See page 86.)

The Chairman: For the benefit of those who have come in later, I wish to state that I have seen fit to arrange these papers in order that we may have a discussion of two or more papers at the same time, and in that way I think we can conserve our time and perhaps finish our entire section before we adjourn at noon, so before the discussion of Dr. Van Derslice's paper I am going to ask Dr. Grace H. Campbell to give her paper on "Medical Inspection of Employees on Certified Farms," and to show you that this is something that is being done very thoroughly with the Commission of the Chicago Medical Society is one of my reasons for asking Dr. Campbell for this paper. Dr. Campbell's paper appears on page 90.)

The Chairman: I am sure, Ladies and Gentlemen, that these two papers on certified milk, in themselves, and the work that they represent, particularly the last one showing the extent to which we follow out the rules and regulations which have been laid down by the Chicago Medical Society, or the American Association of Medical Milk Commissions, will justify you in coming here this morning, besides the other good papers that we have on the program.

Professor Hanson, of the University of Illinois: May I ask who pays for the Boards, the Commission or the Bureau?

The Chairman: Are there any other questions? Perhaps in the answer of that question some other thought may be brought out. Dr. Van Derslice will you please answer the question for Professor Hanson?

Dr. Van Derslice: The purchaser pays the freight. The money is raised by the Chicago Medical Society Milk Commission by dividing our expenses among the farmers. We have certain definite charges that can be charged directly to the farmer. For instance, the bacterial examinations, the sanitary inspections, the veterinary inspections and the tuberculine inspection are all charged to the individual farmer. Then there is the blanket expense. We have a clerk. Our office expenses are about $100 to $125 a month, and our expert expenses, general expenses, are put into that blanket expense. The blanket expenses are divided, where it is possible, with regard to the amount produced on the farm. Other expenses are simply divided equally among the different farmers. That was one defect in our financial system. We started out to divide the expenses and not pro rata, according to the production or to the number of cows. The Milk Commission, I believe, should either certify on a per quart basis, and if there is a profit all right, let that go to the Commission, or divide the expenses on a quart basis. But we have never done that. We divide on a farm basis, so that in reality the producer of a lower number of quarts pays a much higher price for certification than the big farmers, and personally I think that the small farmer or producer is the one to encourage; I think we get better milk from them than from the big ones.

Professor Hanson: The reason I raised the question of the cost, the other day I happened to talk with M. N. Baker, member of the Board of Health of Mt. Clair, N. J., who called my attention to certain abuses in the manufacture and production of certified milk, which seemed to grow out of the fact that the expenses for all inspection, etc., of the expert work are paid for by the dairymen. He said that in their state, on a dairy serving a good many people in Mt. Clair, are maintained systematically tuberculosis cows, and the Certified Milk Commission condemned 180.

Dr. Van Derslice: I might say this, in order to

straighten that matter up, that the producer pays the bills to the Commission; that nobody that does any work for the certified farms is paid by the farmer at all; every penny goes through the Milk Commission, and in that way of course we can charge them amply to pay for all of the bills and yet not have it cost the Milk Commission a single cent. The Milk Commission is not a money making organization in any sense of the word, and we never have but very little money ahead at any time. Are there any further questions?

Dr. Snell: Mr. Chairman, this term "certified milk" is one of the most misunderstood terms in the world. I think probably it is wise not to make any attempt to change it, or any thing of that kind, but in talks before various organizations in the farmers' interests, and women's clubs, for the last two years I have often asked for a written definition of certified milk. I have probably done that a hundred times. In about fifty per cent. of the times certified milk has meant sterilized milk. Certified milk has meant in other cases pasteurized milk, and about once out of a hundred times has the correct answer been given—pure milk.

I do not want to advocate changing the term of certified milk, or anything of that kind, but I recall an incident that happened in our little town about three years ago. A little individual dairyman had about four or five cows, a wagon and a white suit and hat, and started to deliver certified milk, and he got away with it very nicely. He was charging twelve cents a quart for it, when the actual price for it down there was about nine cents. Yet he got by with it because he was the local dairyman. He would go to the depot where the farmers took their milk to be shipped to St. Louis and Chicago, buy the skimmed milk and dilute his own with it and sold it as certified milk. Well there was such a howl raised that he quit business.

Here is what I have been trying to get at: The term "certified milk" is often misunderstood to mean one thing when it really means another.

Dr. Brown (De Kalb County): Many years ago some doctor in Chicago was writing a certificate for a certain kind of mineral water. He wrote, "I recommend this water, not for what it contains, but for what it does not contain." I think that is certified milk. (Laughter.)

The Chairman: That is a very excellent definition.

Dr. Brown: I think that is a very good definition. The campaign for clean milk or certified milk is certainly a campaign of education, not only among physicians, but the laity as well. Both sides must be educated before certified milk is used.

The Chairman: If there is no further discussion on these papers, we will pass on to the next.

The next paper, being the third paper of our series, is "Recent Practice Relating to City Wastes' Collection and Disposal," by Mr. Paul Hansen, Engineer of the State Water Supply, University of Illinois. Professor Paul Hansen. (Paper appears on page 101.)

The Chairman: In Mr. Hansen's talk he mentioned the co-operation that would be possible with adjacent municipalities and, therefore, before the discussion of his paper is taken up I am going to ask for the next paper. It is "Co-operation in Public Health Work by Adjacent Municipalities," by the Commissioner of Health of La Salle, Peru and Oglesby, Ill. Before I had written to him about his paper, I remembered the name as having been associated with my school days, not knowing who the gentleman was until he appeared this morning, and I find he is a classmate of mine. I am glad to introduce Mr. G. H. Ruediger.

Dr. Ruediger: Mr. Chairman and Ladies and Gentlemen: This is an experiment that is being tried out in two places in the United States. (Paper appears on page 96.)

Chairman: I am sure that these two papers that we have just heard were certainly very acceptable to this Section. The paper of Mr. Hanson shows an immense amount of work. The paper that Dr. Ruediger has just read shows something that is practically new in this country, there being only two of these local municipalities which are co-operating. It seems to me that it is a field for very widespread application throughout the country, and I am sure there should be some health officers here from some of the smaller towns and communities that should be able to discuss the work that has been brought out here and at least bring out some new points which he has not touched upon. These two papers of Professor Hansen and Dr. Ruediger are open for discussion.

Dr. Ensign: As a resident of La Salle county, I feel deeply interested in this work. We are very fortunate in having so charitable and public spirited a citizen in our county as Mr. Mathiessen, and I presume it would be a long time before anything of this kind was undertaken had we not had such a public spirited citizen to furnish the means for its initiation. We are very much interested in it and we are very proud of what has been accomplished already by the writer of the paper and his assistants in each city. Fortunately, these cities are right close together; at least, Peru and La Salle are so close together that a stranger could not designate the line between; Oglesby is some few miles away and across the Illinois River, but it will be remembered that our county is second largest in the state in territory, McLean having a few acres more, and third in population. For a long time it stood second in population to Cook County, but Peoria County in 1890 gained by the growth of the city of Peoria, and we are third now, so we have a number of quite large cities—four, I think, whose population will be found between ten and fifteen thousand. Two of these are Peru and La Salle; Oglesby is somewhat smaller. If the good that has been undertaken and is being carried out faithfully by these gentlemen who have charge of it can be made a success in those towns and those cities, largely made up by a class of people of a character hard to control, I believe it could be made a success in almost any other combination of munici-

palities, even although they may be further apart. The combination of Streator, Ottawa and Marseilles could be carried out in a similar way.

Dr. Park (Health Commissioner of Rockford): Regarding the city waste, I presume we have the same thing in our city that the rest of you have; that is, the public dump, which gives the department a great deal of annoyance, and I think the one solution to that is to have each dump supervised and as the low places are filled up have them leveled off. The garbage, too, that is collected eight months out of the year, should be collected twelve months. There is no question but what the smaller towns in the country districts are the places that need the attention at the present time. The smaller villages, about 500 population, are controlled by one supervisor, that is, health officer, who looks after those things. If the complaint seems to him to be bad enough, he reports it to the Board of Health. It seems that the quickest remedy for that will be the Township Health Officers under the jurisdiction of the State Board of Health.

I wish to mention the automobile that Dr. Ruediger mentioned. I do not think that that is practical. I have put in appropriations several times for automobiles and they have been turned down. I bought a motorcycle and that was satisfactory to everybody concerned. The maintenance is very small, a man can get around on it much quicker than he can with an automobile, and can just be on the job all the time. We have one man with a motorcycle and he is the equivalent of about three inspectors who have no way of getting around except walking or going on the street cars.

The Chairman: I am very glad to hear from Dr. Park. Is there any other Health Commissioner from the smaller cities?

A Voice: Godfrey of Bloomington is here.

The Chairman: Mr. Godfrey, will you please arise?

Dr. Godfrey: Mr. Chairman, I want to say that I have very little to say, for the reason that I have only been an officer about two weeks. I don't know anything about it as yet. I came here to learn, and I have never been able to talk about things I did not know anything about, but we have a man here from our town that can always talk and say something interesting.—Dr. Vanderbush.

The Chairman: I will call upon the gentleman if he will arise and say something.

Dr. Vanderbush: Dr. Godfrey is very bashful. I would just say that Bloomington is going through a transformation just at the present time. A number of years ago they adopted a plan of having a medical commissioner and they paid him the enormous salary of fifty dollars a month. That was continued until the present time. Bloomington has recently gone under the commission form of government and we have four commissioners and the mayor, and one of these commissioners is now the head of the Health Department as commissioner and president of the Board of Health. The system of a commissioner in the form in which we had had it did not prove satisfactory, consequently a new plan has been adopted, which has already been condemned by some of our brethren before it has been tried, but which we propose to try out. A board of three physicians has been appointed as advisors to the Board of Health, under a sufficient compensation to pay them for time which may be taken in their advice to this Board of Health.

Dr. Park: I would like to ask Dr. Ruediger in reference to the Enabling Act of the Legislature at the present time.

Dr. Ruediger: Unfortunately I have been away all winter and therefore was not in the State at the time this bill was being drawn up, and as I look it over now there are objections in the drawing up of that bill which make it impossible to pass. It is a very poor bill.

Dr. Park: The bill makes it mandatory on every community to do all these things. I do not see any reason why it should be compulsory in any way. All we want is an enabling act so that the communities can combine and give this Central Health Department some of the powers that are ordinarily vested in our City Boards of Health, and not define specifically just what they shall do. I am sure there would be less opposition and the same results could be accomplished.

The Chairman: Any further discussion?

Dr. Cook, Alton (Chairman of the Board of Health): We are here to learn, like some of those who have spoken. The city of Alton has never had any way of caring for its garbage. I have never had anything to do with it, except the last two or three weeks, and we have a city farm which is used for nothing, practically; rents for about sixty dollars a year, and that rent is not paid. I would like to know whether any city has had any experience in taking care of their own garbage with their own hogs? This farm could be stocked, so to speak, with hogs, and the hauling distance is not more than a mile, and the hogs could be taken care of there, I am very sure, without any objection from the surrounding neighborhood or the city in any way. I would simply like to ask, has any city ever undertaken such a thing?

The Chairman: Can anyone in the audience answer that question?

Dr. Henkel: I do not recall any city that has taken it up as an enterprise, but any number have contracted with individuals to dispose of the garbage that way—Grand Rapids, Michigan, and a number of cities in Massachusetts, Cambridge and some others that I do not recall.

Dr. Robison: I think the farms that are connected with the school at St. Charles are disposing of quite a good deal of garbage from St. Charles and using it for the purpose of feeding it to their pigs, stock, etc., and so far it has been all right. It is an experiment.

The Chairman: Before the meeting began I was talking with Professor Bartow of the University of Illinois on this very same matter, and I think he has something he would like to show you. I am going to ask him to show us what he has in this line.

Professor Bartow (Director of the State Water Survey): Mr. Chairman, the exhibit which I brought here for another purpose is for sewage disposal rather than garbage disposal, and I had not expected to show it here, but will be very glad to say a few words with regard to it on the invitation of your chairman.

Last summer I had the privilege of visiting a number of sewage disposal and water purification plants in Europe, and the scheme which impressed me most was a new scheme for the disposal of sewage by aeration, which has been suggested by Dr. Gilbert J. Fowler of the University of Manchester. This scheme for the disposal of sewage consists in blowing air into the sewage and developing what Dr. Fowler calls activated sludge. The process, in brief, is to blow air into sewage through some kind of diffuser. For instance, in our little plant we have a blower consisting of porous plates. Air is blown in and it bubbles up from the sewage. We allow that air to blow through until purification is complete. Then we take off the clear liquid and leave the sludge in the bottom, and continue that process a number of times, when the purification can be accomplished in a few hours. We can get, for example, complete purification of sewage by blowing air through a mixture of sewage with one-third its volume of sludge in four hours. By complete purification, I mean a clear, bright, liquid effluent which will not develop an odor on standing for any number of days, and I brought along a little exhibit to show—but perhaps I ought to confess to you what the object of bringing this over was. We have a bill before the Legislature for appropriations for the State Water Survey, and I am asking for additional funds for the construction of a sewage experiment station to carry on these sewage experiments on a larger scale, and I have shown these things to a few members of the committees.

Now this (holding up exhibit) represents the sewage of Champaign as it was taken from the sewer on the 16th of May, just a few days ago. That sewage—I don't know whether you care to pass these around and look at them. Don't smell too strongly of that! That (indicating) was mixed with sludge and air blown through it. You see a little sludge in here, but you can see the clear liquid above the sludge. In the third bottle I have some of the purified liquid, which has a slight odor. Now, this is the effluent from a new plant which is not in complete operation yet, and yet there is very little odor to it, and you can see how clear the liquid is. This has not been filtered.

An advantage in this process is that the sludge which is obtained is rich in nitrogen and makes a satisfactory fertilizer. It contains about 6.4 per cent. nitrogen, which is about 2.4 as much nitrogen as in the septic tank process. We have analyzed that sewage and have also confirmed our chemical analysis by planting wheat in this sludge. Nos. 3 and 4 I will pass around. They have been fertilized with sludge. No. 2 was fertilized with an equivalent amount of nitrogen from dry blood, and No. 1 had no nitrogen added to it. That growth was nine weeks old when that photograph was taken. It shows that the nitrogen is in an available form for use as a fertilizer and that, estimated by current prices, it would be worth as a fertilizer at retail $29 a ton, and about $20 a ton wholesale.

Here is another photograph (indicating) of a test in which we have used this sludge, sodium nitrate, ammonium, sulphate, gluten meal and dry blood. In this case also the nitrogen is more available than the nitrogen in these other conditions.

We have constructed a plant in which we expect to handle 10,000 gallons of sewage a day, and we hope to study the conditions under which the process will work best, the conditions of handling the sludge, etc., and hope to be able to develop the process satisfactorily.

I may say that we are not the only people in the United States who are working on the proposition. They are doing similar work in Milwaukee, at New York City and in Baltimore. The Sewerage Commission in Milwaukee is working on a proposition and are very enthusiastic over it. The chief engineer of the commission states that he will be able to do, if the process is satisfactory, on six acres what sprinkling filters would require 120 acres to do. The cost of construction will be very much less and it is hoped that the process will show, with the returns from fertilizer, that it will pay for the cost of the air and the cost of maintenance. We are doing out best to try out the process as soon as possible in order that the cities of the State of Illinois may benefit by this new process, if it is worth anything, and we surely hope that it will be.

I thank you, Mr. Chairman.

The Chairman: We thank you very much. We are glad that the Legislature happened to be in session.

The Chairman: Gentlemen, the four papers that we have just listened to have been well worth our time, and if that was all that we had this program would be well worth your time for coming here. We still have two or three papers which are extremely valuable and which I know that you will all be glad to listen to. The next paper on the program is "Some Pressing Public Health Needs in Illinois," by C. St. Clair Drake, Secretary of the Illinois State Board of Health.

Dr. Van Derslice: Mr. Chairman, may I have the floor?

The Chairman: Dr. Van Derslice wishes to say just a word.

Dr. Van Derslice: Mr. Chairman, I move you that you appoint a committee to draw up suitable

resolutions in behalf of this Section in regard to Professor Bartow's propaganda in regard to appropriation for his sewage disposal experiment station.

Motion seconded. Motion prevailed.

The Chairman: I will appoint Dr. Van Derslice, Dr. Park and Dr. Ruediger, who will present their resolution immediately before this meeting adjourns.

Dr. Drake has the floor.

Dr. Drake: Mr. Chairman, Ladies and Gentlemen: The subject of the paper indicates that I am about to present to you a big problem. I must necessarily present it in a very few words. Some of the very important features that I wish to bring out I must dismiss with a very brief paragraph. (Paper appears on page 122.)

The Chairman: This very important paper, gentlemen, needs practically no discussion. It simply states what the pressing needs of this State are in a very emphatic and definite manner and, therefore, instead of having any discussion on this paper, we will pass on to the next paper.

We will at this time listen to the report of the Committee on Resolutions.

Dr. Van Derslice: Resolution of the Section on Public Health and Hygiene of the Illinois State Medical Society:

Resolution adopted.

The Chairman: The committee that has drawn up the resolution will continue and see that it is reported.

We will now have the paper of Dr. John A. Robison, President of the State Board of Health. Dr. Robison.

Dr. Robison: Mr. Chairman, Ladies and Gentlemen: The hour is late and I do not know but what it would be just about as good a plan as any to read this paper by title; but it is very short. (Paper appears on page 93.)

The Chairman: Before we go, gentlemen, I have two little announcements to make. The first is that another paper which I have on the program will be printed in the ILLINOIS MEDICAL JOURNAL. It was not listed in the program. The subject will be "Sanitation, Personal and Municipal," by Dr. Charles J. Whalen.

It has been usual at this time to appoint a nominating committee to nominate the officers for the ensuing year. I have already heard from that committee, of which Dr. Whalen is chairman, and I will now ask Dr. Whalen to report.

Dr. Whalen: Mr. Chairman and Gentlemen: The committee wishes to present the name of M. W. Snell of Litchfield for chairman of the Section, and Dr. G. H. Ruediger of La Salle for secretary.

Report of committee unanimously adopted.

The Chairman: It will be obligatory on these gentlemen to have at least as good a meeting as we have had this year, which has been excellent.

Motion to adjourn; seconded.

The Chairman: This meeting stands adjourned.

Society Proceedings

COOK COUNTY. CHICAGO OPHTHALMOLOGICAL SOCIETY

Meeting of March 15, 1915—Continued.

A NEW AND SAFE TECHNIC FOR THE CATARACT OPERATION.

Dr. William A. Fisher stated that if loss of vitreous and post-operative inflammation can be avoided in the extraction of a lens, it must be admitted that we are approaching an ideal cataract operation, inasmuch as normal vision is expected in every case where the cornea is clear and the fundus normal. The intracapsular operation more nearly approaches the ideal than any method he is familiar with, providing the operation is performed by operators skilled in the technic.

Dr. Fisher described the various steps of the operation by means of lantern slides, and mentioned two new details in the technic, one of which is the use of the lower lid hook which is original with himself, and the other, the employment of the needle to assist in the delivery of the lens when there is threatening or actual loss of vitreous. The bandage is an important part of the technic, but the greatest care should be taken against any kind of pressure. He prefers four thicknesses of gauze long enough to cover both eyes with a notch made for the nose to keep it from slipping away from the eye. The lashes are covered with carefully prepared yellow oxide of mercury ointment, grain one to a dram, and applied with a glass rod. The gauze is then laid upon the eyes and a starch bandage is applied.

Operators who have mastered the Smith technic will seldom use the needle or spoon.

After referring to accidents and complications that occur when performing the so-called classical cataract operation, Dr. Fisher drew the following conclusions: 1. Many lenses will be removed in capsule. 2. There is less post-operative inflammation. 3. Less infection. 4. Less secondary operations. 5. Less loss of vitreous. 6. Less time in hospital. 7. Better average vision. 8. Patients can be operated on any time the opacity incapacitates them from their ordinary duties. 9. Safer technic than the old operation for beginners as well as experienced operators.

DISCUSSION.

Dr. George F. Suker said a nice cataract operation is the quintessence of surgical skill, and since mastering the technic of intracapsular extraction, he feels safe in delivering the lens in its capsule. As regards the use of a fenestrated spoon for the delivery of a partially luxated lens, he does not think it is good surgery and gave his reasons for it. Judging from his own experience, one ought not to have any great difficulty in doing intracapsular extraction, provided he has acquired the technic.

Dr. C. F. Burkhardt, Effingham, Ill., asked whether there was greater danger of loss of vitreous from the intracapsular operation as done by the average operator who had not mastered the exact technic if Smith or Fisher than from the old method of operating.

Dr. G. H. Mundt stated that until last October he held the same opinion as the majority of ophthalmologists in regard to the Smith intracapsular operation, but since seeing Dr. Fisher perform 12 or 15 of these operations, and having operated in this manner himself, the operation appealed to him very strongly. The vitreous did not present more than once in the 12 or 15 operations he saw. The lid hook simplifies the operation very much.

Dr. Thomas Faith emphasized the importance of mastering the technic of the Smith-Fisher operation, and since doing it he had performed the intracapsular operation in four cases, and although he was a doubting Thomas at first, he operation now appealed to him.

Dr. Oliver C. Tydings stated that so much had been said about loss of vitreous in the Smith operation that many members of the profession had learned to regard this as a part of the operation, but if one would study the statistics he would find they did not show a more frequent loss by this than by any other method, nor was this all, for if one would carefully analyze these losses he would find by the Smith method the loss was, as a rule, slight, while by the classical method, when the vitreous came ahead of the lens one felt very happy if he could extract the lens and get through with the toilet without losing more than one-third of the vitreous. By the safe method described it was almost a physical impossibility for a careful operator to lose vitreous. This safe operation had been made possible by the use of lid retractors to relieve all pressure, the double hook being one, and the needle to be used in case of necessity when trouble arose due either to too small an incision or too large a lens. By this method one would leave some capsules, but would save all vitreous.

The objection to leaving a bandage on for nine days was only the protest of the untried. The members of the society had every reason to be proud of the technic so materially aided in its development by one of the members. The Smith-Fisher technic was the best thing in cataract extraction. Dr. Fisher took the safest and best operation yet devised and had robbed it of every possible danger.

Dr. John R. Hoffman stated that since Dr. D. W. Green demonstrated the intracapsular extraction in 1912 in Chicago, he had been an advocate of the operation and had practiced it with good results. In many operations where he could have done an intracapsular extraction, he had to do the old operation because of unfavorable conditions present after the incision was made and the lack of knowledge of the technic for surmounting them. In his earlier operations he followed the technic as nearly as possible described by Dr. Vail in his clinical description of the operation, but he failed to get the idea of the use of the spoon in delivering the lens in impending loss of vitreous. Had he gotten the idea of the physics of the spoon delivery in mind, he thought he could have done more intracapsular extractions. He did not get the technic of the spoon until after the return of Dr. Fisher from India. Since then he had had some experience in its use and agreed with Fisher that it was liable to produce a decided disturbance of the vitreous. Since Dr. Fisher had given the technic of the use of the needle, he was reluctant to use the spoon except as a last resort, as with the needle, even though the capsule was ruptured, it was left in such position that very little irritation was caused by its presence, and it was out of the line of vision, or if it was not, it could be needled as after the old operation.

The lid retractors and hooks were a good substitute for the speculum.

Dr. Fisher had worked out a technic which would prove as near a safe one in cataract extraction as possible, especially in immature cases, where the patient would suffer great economical disadvantage in waiting for maturity, would do away with the dangers of the old operation, where capsule remained, and would also help the practitioner in doing many intracapsular extractions.

Dr. Fisher, in closing, answered the question of Dr. Burkhardt by quoting his last conclusion, which reads: "Safer technic than the old operation for beginners as well as experienced operators."

When he was working with Dr. Smith in India he thought the Smith technic was so good that it could not be improved, but as soon as he returned to Chicago and began operating he felt the necessity of modifying the operation and these modifications had been suggested to him in doing fifty intracapsular operations without Dr. Smith and his assistant. He believed, therefore, the technic he had described was the safest yet devised both for good operators as well as for beginners.

A regular meeting was held April 19, 1915, with the president, Dr. Richard J. Tivnen, in the chair.

PARALYSIS OF BOTH EXTERNAL RECTI.

Dr. William H. Wilder exhibited a little girl, seven years of age, previously perfectly healthy, who, while riding a bicycle, was thrown over the handle bars and struck against a wagon, injuring the right malar bone. She was not rendered unconscious, but somewhat stunned. There was hemorrhage from the left ear. The ear drum was ruptured, and there was considerable bleeding from this ear. She was nauseated soon after the injury, and about four or five hours following the injury it was noticed by her mother that her eyes were crossed. There was distinct and complete paralysis of the right external rectus, and almost complete paralysis of the left external rectus, otherwise the eyes were in every way normal. The media were clear. The eye grounds were normal, and she had vision of 20/20 or better in each eye without correcting glasses.

The fact that the paralysis did not occur immediately, but occurred some four or five or six hours after the receipt of the injury would seem to suggest it was not a fracture of the bone that caused injury of the nerve that passes over the tip of the deepest portion, but it was more than likely due to the hemorrhage that resulted from a rupture of some of the small vessels in the meninges. Possibly this explained the paralysis of the left external rectus as well as that of the right. He brought this forward as a suggestion and as the more probable explanation of the condition, and if so, it might hold out a more favorable prognosis than if the nerve itself had been cut, because then there would not be so much hope of regeneration and recovery would be longer delayed.

His experience with these cases was that he had only seen a few of them, but never saw a double one before. He had seen cases of injury of the sixth nerve from blows, both from fracture at the base of the skull and from a blow on the side of the head. The prognosis in those was fairly good. Recovery ensued anywhere from three to seven or eight months.

DISCUSSION.

Dr. Wesley Hamilton Peck said the drum membrane might have been ruptured and hemorrhage came from the ear on account of a fracture of the petrous portion of the temporal bone.

As to the sixth nerve being involved, he thought some light might be thrown on this by taking X-ray pictures in the

same position they were taken over the mastoid, the tip of the head, so that one could only get one temporal bone in the picture. If stereoscopic X-ray pictures were taken they would no doubt assist materially in showing if there was fracture of the temporal bone.

Dr. Brown Pusey stated that some three or four years ago a similar case came under his observation, the patient being a boy, fourteen years of age. He was thrown off of a horse. He made a recovery at the end of three months. In this case he attributed the paralysis to a hemorrhage at the base, catching both nerves along the course up under the pons.

Dr. Wilder, in closing, said that X-ray pictures had been taken by Dr. Potter, but he had not had an opportunity to study them as yet, but would soon do so. With stereoscopic X-ray pictures one might be able to see a fracture if there was one present.

ULCER OF THE CORNEA COMPLICATING COW-POX INFECTION.

Dr. J. Sheldon Clark stated that he did a good deal of his work in a dairy district, and it was his fortune to see two cases of ulcer of the cornea complicating cow-pox. In the first case the eye was lost.

The case he reported was that of Mr. A. L., 32 years of age, who came to him last spring for an ulcer of the cornea. He had a cow-pox infection at the time he came and had a number of vesicles on different parts of the body, particularly on the hands and face. He had a large corneal ulcer which covered about one-half of the cornea. This healed under treatment which lasted for a few months. In a dairy district one occasionally saw such infections on the hand, but he had only seen two of them infecting the eye. In this case the systemic symptoms were marked and were similar to those of smallpox. Patient also had pigmentary nevus in one eye.

KERATITIS PETRIFICANS.

Dr. Harry S. Gradle presented a case for Dr. Young, of Burlington, Iowa, who unfortunately was unable to be present. The patient suffered from a foreign body in the left eye for about twenty months. Two days after the foreign body entered the eye an ulcer appeared which lasted for two months. Following the ulcer there remained a scar on the left cornea. This had not changed markedly in size in the past fifteen months, although yellow oxide of mercury, massage, and iodids internally, and practically everything else had been resorted to except surgical interference. This scar was rather tense, involving the superficial areas of the cornea. The eye was painful, and the man could not get very much better vision. The patient wanted to get relief, and the speaker expressed a desire to have the case discussed and, if possible, some suggestions offered with reference to treatment.

DISCUSSION.

Dr. George F. Suker, in discussing the case presented by Dr. Gradle, said that calcareous degeneration of the cornea or lime deposits did not occur in an eye that was chronically inflamed, or had chronic inflammation of some kind or another. If the eye was let alone, he was under the impression that the patient would lose it entirely and it would have to be enucleated on account of pain. He had had just such an experience in two cases, and had he known then what he knew now he might have saved the sightless eye, which was better than a glass eye by having this portion of the cornea excised and a corneal graft transplanted, or the whole thing might be excised with a cataract knife, and in addition a flap turned over with the conjunctival flap. In this way the eye could be saved and the pain stopped.

Dr. Wilder said it seemed to him that the pupil was not more than half covered and before attempting anything so radical as a grafting operation, which is difficult and uncertain he thought it would be proper to excise this portion of the cornea by curettment and then possibly add to that the cautery. Both methods combined, curettment and then cauterizing this area, might destroy the nerve endings and relieve the man entirely of the pain and make a good white scar. It did not make any difference so far as the sight was concerned if it did not encroach any more upon the pupillary area of the cornea. He thought this was the measure to try before attempting a more difficult keratoplasty.

Dr. Harry S. Gradle mentioned a method which was advocated years ago, namely, to trephine an area about the size of the scar, taking in clear corneal tissue about half the depth of the cornea, turning a trephine button on itself and clearing away some of the scar from the pupillary area. The man who had suggested this method had met with success in several cases, but the turned button had remained. If there was a possibility of doing this the pain would be less.

OPTIC NEURITIS.

Dr. Emory Hill presented and reported a case of optic neuritis. The patient, a man, 29 years of age, consulted him last October with headaches which were relieved by refraction. Patient had approximately one and a half D. of hyperopic astigmatism in the eye. The unpleasant thing was the appearance of the eye grounds. The left eye had a swelling of the disc 2½ D. The right eye had no swelling of the disc, but a distinct arteriosclerosis of the retinal vessels. The patient stated that at intervals for five years he had been told that he had something interesting about his left eye. He had had examinations made, but nobody had discovered anything wrong except he had a peculiar nerve. His vision with correction was 6/4 in each eye. In October there was no enlargement of the blind spot. When he presented the patient last month before the society he thought the swelling of the left nerve head might be congenital, a so-called pseudo-optic neuritis. Since last month the right disc, which was not swollen in October, had become blurred and swelling had come on, which was at least 2 D. in height. The swelling in the right eye was more typical of optic neuritis than in the left. The vessels dipped in and out of the edematous area. Vision was still 6/4 with correction, but there was a distinct enlargement of the blind spot for red and a trifling enlargement for blue and white in each eye. A Wassermann was negative. Careful physical examination showed the urine negative, and blood pressure normal for his age. Patient had a rather full and firm radial artery. He had a sclerotic condition of the vessels in the right eye. His sinuses, nose, tonsils and teeth were normal.

The diagnosis was interesting. Unquestionably the condition in the right eye was a true neuroretinitis, while the condition in the left eye, he was inclined to think, was the same, and not a pseudo neuroretinitis as he supposed at first.

DISCUSSION.

Dr. George F. Suker stated that Dr. Hill's case resembled the case of a woman whom he presented to the society

two months ago, where the condition began in one eye and then traveled to the other. It extended over a period of a number of years. Whether the two cases were alike he could not say, nevertheless one should make a skiagram.

Dr. Brown Pusey recalled one case in which there was a pseudo optic papillitis in one eye, but not in the other.

Dr. Casey A. Wood said that when Dr. Hill described his case he thought it might be one of pseudo optic neuritis, as such cases had been described in the literature, but with enlargement of the blind spot he thought one was justified in believing it was a case of optic neuritis, with well-preserved central vision and without any limitation of the peripheral fields.

Dr. William H. Wilder did not think that all cases of optic neuritis were symmetrical. There was apt to be asymmetry in these cases as in other anomalies, but in this particular case he thought it could be excluded from Dr. Hill's observation of the swelling. The optic nerve head in the right eye was elevated 2 D. and it covered 2½ D. In the cases of pseudo optic neuritis he had seen there was a considerable connective tissue element in the retina immediately surrounding the margin of the optic disc, which gave it the simulation of optic neuritis. However, a more careful study of the case might indicate it was not a real inflammatory process or an edematous process at the head of the optic nerve. This case had more the appearance of a real optic neuritis and he thought it must be that.

BIRTH INJURIES OF THE EYE.

Dr. C. P. Small stated that a study of recorded cases showed a general agreement in the following particulars: Practically all have followed a difficult instrumental delivery, although cases have been reported of an unusually long confinement, associated with a contracted pelvis, where injury occurred when no instruments were used. One eye alone was generally affected. The injury was usually associated with other signs of traumatism, as abrasions of the skin, subconjunctival or retinal hemorrhage, hyphemia, etc., and that a more or less characteristic form of corneal opacity was usually present. The most frequent of all forms of birth injuries are those involving the cornea.

After going extensively into the literature of birth injuries of the eye, Dr. Small reported the following case:

The patient was 11 years of age, the younger of two children. Her mother says it was a breech presentation, that after a very long and painful confinement she was given chloroform, and the child delivered with forceps. There was an extensive perineal laceration. The child weighed 14½ pounds. At the present time there are scars on both sides of the head over the parieto-temporal areas, made by the forceps, the one on the right side showing that the wound had been deep, while the tip of the same blade cut the lower right eye-lid, resulting in the scar which was shown by a drawing. There are three distinct linear opacities extending vertically across the entire cornea. In addition to the corneal injury there is a partially opaque lens, dislocated upwards. There is the tremulous iris which accompanies this condition. There is atrophy of the optic nerve, and a slightly increased intraocular tension. Vision was reduced to counting fingers at four inches. Vision in the left eye, with a +0.50 cylinder, axis 90° is 20/20.

The lower edge of the lens appears less curved than usually appears in this condition, and much darker in color than the remaining portion of the lens. A similar condition was seen in a case reported by Wurdemann where there was a partial upward dislocation of the lens. A brown line extended across the lens, evidently the remains of a blood stain from a hyphemia which was present after birth. In addition to the cases already mentioned, this peculiar and unusual form of linear opacity due to rupture of Descemet's membrane at the time of birth has been observed by Braav, Green, Henderson and others.

DISCUSSION.

Dr. Wesley Hamilton Peck had seen a case of birth injury of the eye similar to the one reported by the essayist. He exhibited a case to the society several years ago of extreme proptosis following delivery. Subsequently this condition receded and assumed a normal position.

Dr. J. Sheldon Clark stated that two weeks ago he was called by a general practitioner to see the case of a young child some three days old, presenting a peculiar condition of the cornea. The cornea looked as white as though carbolic acid had been dropped on it. The doctor was perturbed in regard to it and asked whether delivery had anything to do with it. In looking up the literature he had found there were such cases. However, the condition cleared up in three or four days' time.

Dr. Small, in closing, stated that in his paper there were a number of references to other forms of birth injuries, especially those of the cornea and temporary opaque opacities. There was one case reported where the eye was partially lying on the cheek at the time of birth. There were also cases of strabismus from injury of the muscle, as well as in other portions of the body. All these came under birth injury proper.

THE SCLERO-CORNEAL SETON IN THE TREATMENT OF GLAUCOMA; A PRELIMINARY REPORT.

Dr. Casey A. Wood stated that without attempting at this time to develop or discuss the arguments for such a desirable end, after some preliminary lower animal experimentation the operation he was about to describe was done on two human subjects. The results were so encouraging that he now presented one of the subjects operated on and hoped the method might commend itself to the judgment of the members so as to give it a trial.

For the purpose of this experiment cases were chosen that had failed of relief at his own and at other's hands by the usual operative measures.

The first case was that of a boy, aged 11, first seen on November 28, 1913. About two years previously he bumped his left eye against the corner of a chair. A concussion cataract formed, which was removed by another ophthalmic surgeon. Some thickened capsule remained. Three months afterwards there was much pain in the eye when the surgeon did a large, upward iridectomy, for the relief of glaucoma. Since then the vision had become steadily worse and the mother thought the eye-ball had grown larger. The patient had had attacks of pain in the left eye for some time, and the vision was reduced to perception of hand movements. As the tension remained plus 1, an Elliott trephining was done, under nitrous oxid gas and ether, on December 11, 1913. The operative wound healed nicely and the patient did fairly well

until about three months ago, when the pains and discomfort in the left eye returned and the tension again rose to plus 1. The patient's tonsils and some adenoids were then removed, without effect upon the ocular situation. A month ago a scleral seton was introduced. The reaction was inconsiderable, and drainage had since been well established. Tension was now normal both under finger pressure and by tonometric readings.

Dr. Wood reported a second case, and then described the procedure he had adopted in these two cases, as follows:

The eye is carefully rendered as aseptic as possible and the pupil is contracted by eserin. A narrow Graefe knife, with a hole near its point, is introduced and passed in precisely the same fashion as in the preliminary step of an anterior sclerotomy. The puncture and counter-puncture are made entirely in the sclera, but as near the clear corneal margin as possible, so that at least one-half the operative wound communicates with the anterior chamber. When the point of the instrument emerges from the lobe at the counter-puncture one needle of a double armed, white, 00 braided, silk suture, about eight inches long, is passed through the hole in the knife point. After a number of trials, it was found that a half curved needle is better adapted to the purpose than a straight one. It should be just large enough to pass easily through the eye of the knife, and should not be more than two-thirds of an inch long. Thus armed, the knife is withdrawn, so that about the same lengths of double sutures protrude from puncture and counter-puncture. The knife is now freed from the sutures with scissors, and the first needles are with a needle holder separately passed (by way of the counter puncture wound) in different directions and for the length of the needle, beneath the ocular conjunctiva. The loose ends of suture corresponding to the puncture opening are then threaded and the same maneuver is practiced on that side. The so-called split or patent eye needle is most useful here, since a wet, sterilized suture can be immediately threaded upon it; otherwise valuable time is sure to be lost in vain attempts to pass damp threads through the eye of the ordinary needle.

It matters not what form of anesthesia be used, but it is well to employ a mixture of cocain and adrenalin locally to staunch the bleeding from the scleral wounds.

DISCUSSION.

Dr. William A. Mann asked Dr. Wood if he put in a double thread. In most of the operations only one thread was used. Personally he thought a double thread was better. He would also like to ask as to the kind and size of the silk.

Dr. Wood, in reply, said that if one thread corresponding to two filtration area tracts are good, he thought four would be better than two. He really had that in mind when he thought of utilizing the double ends of the suture. Where we get four tracts or four canals he thought there was or might be some additional irritation. He did not believe, however, a double thread would irritate more than a single thread would.

As to the kind of thread used he had employed different sizes in animals, but he used a double knot braided silk thread—white. The size was 00.

FULTON COUNTY

The seventy-second meeting of the Fulton County Medical Society was held in the Auditorium of the Y. M. C. A. building in Canton, Ill., July 6, 1915, and was called to order at 2 p. m., by President Howard.

On motion the courtesy of the Society was extended to Dr. A. J. Hinkelman of Galesburg in that he be permitted to present his paper at the present time in order that he may return home on the train.

Dr. Hinkelman presented a paper on the "Bacteriology of the so-called Intestinal Influenza."

Discussion was lead by Dr. Snively.

On motion a vote of thanks was tendered Dr. Hinkleman for his presence and his presentation of such an excellent paper.

On proper application from Dr. F. L. Clemens for a withdrawal card to the Knox County Medical Society the secretary was instructed to supply Dr. Clemens with the same.

On account of illness Dr. Finley of Galesburg could not be present to fill his number on the program.

Secretary Ray having arrived Dr. Stoops, secretary pro tem, gave place to him.

The minutes of the May meeting were read and approved.

State Delegate Snively made a report of the state meeting at Springfield.

Dr. Stoops, chairman of the committee on constitution and by-laws was ready to report.

Snively and Cluts moved that the proposed constitution and by-laws be voted on one section at a time as they were read. Carried.

On motion of Drs. Cluts and Bunch section IV was changed to read,

"That the time and place of four meetings remain the same as under the present Constitution and that two migratory meetings be added and that the time and place of the two migratory meetings be determined during the year by the program committee."

Oren and Coleman moved that the Secretary prepare an historical sketch, list of officers, list of active members, list of honorary members, deceased members and give to the committee to be included with the printing of the Constitution and By-Laws. Carried.

Oren and Shallenberger moved that the several chapters and sections as read and adopted of the proposed Constitution and By-Laws be hereby adopted as a whole to take effect October 1, 1915, and that the committee be instructed to have three hundred of the same printed. Carried.

The following members were present: Howard, Stoops, Shallenberger, Oren, Snively, Parks, Welch, Gray, Putnam, Cluts, Coleman, Clemens and Ray. Total 13.

COLLECTIONS.

A. C. Cluts	$5.00
F. L. Clemens	3.50
Total	8.50

D. S. RAY, *Secretary.*

MADISON COUNTY

The Madison County Medical Society met at the Alton State Hospital on July 2, 1915, with President Dr. Lay G. Burroughs, presiding. Nineteen members present; thirteen visitors.

The minutes of the last meeting were read and approved. Dr. M. W. Harrison of Collinsville, made a request that the August meeting of this society be held at the Harrison Tubercular Colony annually, which was granted. The secretary was instructed to arrange a meeting for Marine, to be held on the first Friday in September, to accommodate the members living in the eastern part of the county. The secretary reported the receipt and distribution of 8,000 book-marks to be used by the several public libraries of the county, as recommended by the National Society for the study and prevention of tuberculosis. He also reported the receipt of a stock lecture and 27 lantern slides, on the subject of tuberculosis, recommended by the same society. This lecture together with slides and our stereopticon, is at the disposal of any of our members who will use the same to give greater publicity to our tuberculosis work along educational lines.

Dr. H. Douglas Singer, superintendent of the Psychopathic Hospital of Kankakee, made an address along psychopathic lines, which was highly instructive and was received with marked attention.

Dr. Geo. A. Zeller, alienist of the state board of administration gave a most excellent address on the "Status of Leprosy" in which much information was given that was decidedly new to the majority of his hearers.

Hon. A. L. Bowen, executive secretary of the state charities commission, made a short address comparing the more recent treatment of patients at the State Hospitals with the treatment under the old sysem, emphasizing the absence of all forms of mechanical restraint. A vote of tnanks was tendered to all of our distinguished speakers. Elegant and substantial refreshments were served in profusion by our host, Dr. Harry S. Seiwell, medical director of the institution, which were highly appreciated and acknowledged by a vote of thanks.

Adjournment to meet in Collinsville on the first Friday in August.

E. W. Fiegenbaum, Secretary.

McHENRY COUNTY

A joint meeting of the Medical Societies of Boone, Kane, McHenry, Stephenson and Winnebago Counties was held at Rockford, February 9, 1915.* It was well attended. The excellent program, a copy of which was mailed to all our members at the time, was rendered. Doctors Smith, Seelye, Johnson, Baccus, West and Windmueller attended from this county.

The McHenry County Medical Society was called to order by the president, Dr. A. B. Smith in the Woodstock Hotel at 10:45 a. m., Friday, April 30, 1915. Sixteen members present.

The minutes of the October 10, 1914 meeting, which was the last previous one held in this county, were read and approved as read. A communication was then read by the secretary from the legislative committee of the state society, asking our society to communicate with our representatives in the legislature requesting them to oppose the passage of the Optometry Bill, and a motion was duly carried that the secretary be instructed to forward the desired communication.

The secretary read a request from the Jefferson County Medical Society that our delegate to the State meeting be instructed to support a measure to have a redefinition of the Illinois Medical Practice Act so that it will include the terms and means employed by charlatans and frauds, such as "Dr.," "Professor," "Eye Sight Specialist," "Magnetic Healer," and a motion was duly made, seconded and carried that the delegate be so instructed.

It was then moved by Doctor Windmueller that our annual meeting be held in about a month at Crystal Lake and that the secretary be instructed to invite the Kane County Medical Society to meet with us. Motion carried.

It was moved by Dr. Chas. C. Peck that the present officers be declared re-elected, whereupon Dr. A. B. Smith, president, stated that having served two years as secretary and one as president he deserved to be relieved. The following officers were then duly elected: president, Dr. C. W. Goddard; vice-president, Dr. Hyde West; secretary-treasurer, Dr. N. L. Seelye; censor, Dr. Chas. C. Peck, to succeed Dr. E. V. Brown, making the order of succession—Baccus, Pflueger and Peck; delegate to the Illinois State Medical Society for two years, Dr. N. L. Seelye.

President Smith called the attention of the members to the new "State Rules for the Control of Communicable Diseases," on pp. 313 and 314 of the April number of the Illinois Medical Journal, stating that as city physician for Woodstock he had secured from the state board of health copies of the new quarantine regulations issued by the board and had distributed same to the physicians of Woodstock and suggested that the same be done at once in the other towns of the county.

Doctor E. Windmueller, Councilor for the First District, then stated in regard to the medical defense furnished to members by the State Society that much money had been wasted through doctors, threatened with suits, engaging local attorneys and incurring a large expense before reporting to the proper officers of the State Society. That in the future the State Society would be less free to pay such bills and that any member deliquent in dues would not be eligible to financial aid by the State Society. (This statement was followed by a general stampede for the payment of dues by the delinquent members.)

Dr. H. M. Francis of Woodstock showed a burn

*The joint meeting was reported in the March Journal, page 251.

case and made a detailed report, the following abstract was kindly furnished by Dr. Francis:

"A five-year-old girl received, two years ago, severe second and third degree burns, mostly over the anterior and left side of abdomen, covering ¼ to ⅓ the body surface. Five month's treatment gave a perfect functional result and comparatively slight scarring. After the first day pain was almost entirely absent. Shock was overcome by morphin, strychnia and whiskey. Toxic absorption was combated by enemas of sodium bicarbonate. Infection was controlled by 5 per cent. iodine in oil and weak dilutions of Lugol's solution in water. Skin-grafting was performed on the 22nd day. Out of 40 grafts, taken from 20 young men, only two failed. The entire grafts adhered. At the end of the second month an accident revealed and unsuspected necrosis of the internal oblique and a second grafting was performed 18 days later. Two per cent. scarlet red ointment stimulated granulations markedly, but did not check pus formation and was consequently alternated with iodine solution. Patient was gotten out of bed from 19th day with great benefit to her general condition. The principal feature of treatment was entire lack of dressings, the wound being protected by a wire cage that allowed the free access of circulating air.

Dr. N. L. Seelye of Harvard demonstrated two cases of acute mastoid disease in which he had performed mastoid operations three years and three weeks ago, respectively, and emphasizing the importance of early paracentesis in cases of ear-ache, as a conservative measure, cutting short the disease, preventing deafness and mastoid complications.

The meeting then adjourned to the dining room where a bounteous chicken dinner was had, after which all attended a lecture at the local theater, by Mr. McKenzie of the H. K. Mulford Company, illustrated with moving pictures on the methods employed in the manufacture of serums and vaccines.

JACKSON COUNTY

The second quarterly meeting of the Jackson County Medical Society met at Carbondale, July 1, 1915. There was no scientific program. This meeting was an out door affair and the hum-drum of daily practice was forgotten for that day.

The entire society and their families were entertained by the Carbondale physicians who secured the use of Thompson's lake, where they served dinner in such a bountiful manner that when all were well filled there was enough left for as many more.

After dinner the happy crowd indulged in fishing, boat-riding and swimming to their heart's content.

This was by far the best meeting socially the society has ever had and we owe its success to the ability of the Carbondale physicians and their wives to entertain.

The next meeting will be held at Carbondale Sept. 16, 1915. LOUIS R. WAYMAN, Secretary.

STEPHENSON COUNTY

Despite the heat and oppressive barometer there was a fine turn-out of doctors at the mid-summer meeting of the Stephenson County Medical Society on Thursday, July 15, 1915.

Promptly at 12:30 dinner was served by the Brewster House management, and twenty-five covers were laid. Twenty-three members and four guests were present at either the dinner or the meeting.

A four-course dinner was served. A vote of thanks was extended section number four for the arrangement made for the entertainment of the society. Much credit is due the management of the Brewster House for the splendid service. Our society has found that the division of the membership into four groups, with one man selected as "captain"; and whose function is to provide a dinner place of meeting and other necessary arrangements, has been of inestimable value to our meetings.

Immediately following the dinner the society adjourned to the parlors where the program was given as follows:

1. "Some Ocular Manifestations of Arterio-sclerosis," Dr. W. J. Rideout.

2. "Principles Underlying the Treatment of Septic Peritonitis," Dr. J. E. Allaben, Rockford.

3. "Clinical Cases". Dr. J. H. Stealy presented a case of sarcomatous cyst of the tibia, with x-ray plates showing the effect obtained after bone transplantation. Dr. Harlan exhibited a specimen of hypernephroma that had recently been removed.

Dr. Cuthbert J. Leavy, delegate from the society to the State meeting at Springfield, made a very good report of what took place in the House of Delegates. No mistake was made in sending Dr. Leavy as our delegate, for he evidently was "on the job" and in the "main tent" from start to finish, and not out seeing the "side shows." It was the doctor's opinion that every practitioner of medicine should be allied with his local county society, and helping to make it truly the representative unit of medical organization.

The secretary read a communication that he had received from R. J. Simpson, secretary of the local Chamber of Commerce, in which it was stated that the recent request of the committee sent by the society to enlist his services in securing better train communication had accomplished several improvements. Dr. Clark also spoke of his recent trip to Springfield in conjunction with several members of the Chicago Ophthalmological Society and of the fruitlessness of their mission. The trip was made for the purpose of being present at the hearing given by Governor Dunne on House bill No. 9, known as the Optometry Bill. Our delegation looked very small compared with the seventy-five or more opticians that were there from all parts of the state in the interest of this bill. From the apparent state of mind the Governor we "went away sorrowful," knowing full well that it was a lost cause. Thus medicine stands idly by and sees yet another limb torn asunder, and given as a prey to "half baked" doctors.

J. SHELDON CLARK, Secretary.

WINNEBAGO COUNTY

Regular Meeting, June 8, 1915.

The Winnebago County Medical Society met at the Nelson House, Rockford, on June 8, with Dr. H. M. Starkey in the chair. Seventeen members present and two visitors. Minutes of two previous meetings were read and approved.

This being a clinical meeting on vaccines, cases were reported and illustrated by local members. Dr. John Tuite reported good results with use of vaccines in acne of face, pyelitis with pregnancy and chronic bronchitis.

Dr. George Gill illustrated two cases; one a young boy who had never been well since three months of age and had had several serious diseases, and who became perfectly well following removal of tonsils and the use of vaccine. The other case was a young man with symptoms of chronic lagrippe and sciatica. He, too, recovered with use of vaccines.

Dr. T. H. Culhane reported some very interesting cases of whooping cough and erysipelas treated by vaccines with rapid improvement. General discussion followed.

It was moved and seconded that a joint meeting of local doctors and dentists be held in September and that the president and secretary form a committee to co-operate with the officers of the dental society to bring about such a meeting. Motion carried.

The meeting then adjourned.

DR. C. M. RANSEEN, Secretary.

WOODFORD COUNTY.

EUREKA, ILL., May 4, 1915.

Woodford County Medical Society met in annual session in the courthouse at 10 o'clock a. m. Meeting called to order by President W. S. Morrison. Members responding to roll call were C. F. Banta, F. E. Briggs, N. B. Crawford, W. C. Cotton, R. E. Gordon, F. H. Henderson, J. I. Knoblauch, H. A. Millard, W. S. Morrison, F. C. Nichols, F. W. Nickel, R. H. Smith and James Tweddale. Minutes of previous meetings read and approved. Report of secretary-treasurer read and approved.

S. M. Burton of Low Point was elected to membership in this society.

Moved and seconded that the delegate be instructed to use his full influence against the ruling of the collector of internal revenues, whenever opportunity should present, regarding the dispensing of opiates and the recording of same. Motion carried.

The following officers were then elected for the ensuing year: President, F. W. Nickel; vice-president, F. C. Nichols; secretary-treasurer, H. A. Millard; delegate for 1916 and 1917, H. A. Millard; alternate delegate for 1916 and 1917, F. H. Henderson; censor for three years, L. E. Bratt. Present board of censors: J. I. Knoblauch, F. W. Wilcox and L. E. Bratt.

The following program was then given:

"Rheumatic Arthritis," F. W. Nickel.

Report of Cases, F. C. Nichols.

Two cases of Ascites with Differential Diagnosis, R. H. Smith.

A number of interesting cases were reported by other members and freely discussed by all present.

Adjourned. H. A. MILLARD, Secretary.

Personals

Dr. Alice Hamilton has returned from abroad.

Dr. Chester H. Latham, Pecatonica, is reported to be critically ill with nephritis in St. Anthony's Hospital, Rockford.

Dr. Franklin J. Drake, president of the Lombard College, has resigned and will re-enter the practice of medicine.

Dr. and Mrs. W. H. C. Smith of Godfrey, chaparoned a party of sixty students from Lindenwood College at the Panama exposition.

Dr. Augustus W. Chandler, formerly of Dixon, now in charge of the Lincoln Hospital, Rochelle, fractured three ribs in the overturning of an automobile, July 5.

Dr. Theodore B. Sachs is holding over as superintendent of the Chicago Tuberculosis Institute, pending the appointment of his successor. His commission expired July 1.

Dr. John Dill Robertson, Chicago, has been appointed a member of the board of trustees of the Chicago Municipal Tuberculosis Sanatorium, succeeding Dr. George B. Young.

Drs. Chas. B. and Annetta A. Saunders, 919 N. La Salle street, Chicago, spent last month in the Ozarks and will take a Mississippi river trip before returning to the city, September 1.

Dr. John H. Siegel, mayor of Collinsville, held the lucky ticket and won a six cylinder seven passenger Paige automobile at the recent Elks State Convention held in East St. Louis.

News Notes

—The new Royal Arch Memorial Hospital at the Illinois Masonic Home, Sullivan, was dedicated July 5.

—An automobile ambulance has been donated by Mr. John T. Crane for the use of the Iroquois Memorial Hospital, and the health commissioner has asked the council for an appropriation for the maintenance of the car.

—Trustees of the Elizabeth McCormick Memorial Fund have been notified that their open-air school exhibit at the Panama-Pacific Exposition has been awarded the grand prize for school hygiene, a medal of honor and a gold badge in education.

—In the baby-saving crusade of the department of health, six fresh-air colonies have recently been established in congested parts of the city, and ninety-three nurses, six supervising nurses and three supervising health officers are occupied in reducing the number of deaths among babies during the hot season.

—Mr. George F. Porter, chairman of the Murray Depage Memorial Fund, announced on July 2 that the fund of $20,000 has been completed and will soon be forwarded to Dr. Antoine Depage, surgeon general of the Belgian Red Cross. This fund is in memory of Madame Depage, who, after effective work for Belgium, both here and abroad, lost her life on the Lusitania.

—The superintendent of health of Oak Park, after a persistent investigation as to the cause of typhoid fever which has been epidemic in that suburb of Chicago, announces that he has found the typhoid carrier in the person of Mrs. Mary Burke, who for three years has been at work in the lunch room of the Oak Park High School in which so many cases of the disease occurred. She is now detained under police surveillance in the Oak Park Hospital.

Marriages

Everett Benson Williams, M. D., to Miss Cecelia R. Daly, both of Chicago, May 3.

Samuel D. Rosenthal, M. D., to Miss Tubie Greenspahn, both of Chicago, July 4.

Arthur T. Betts, M. D., Chicago, to Miss Florence Bras of Seattle, Wash., June 19.

Peter Joseph Christenson, M. D., to Miss Clara Mulligan, both of Chicago, June 30.

John William Goggin, D.D.S., to Miss Margaret Helen Mann, both of Chicago, June 12.

Felix J. Maciejewski, M. D., La Salle, Ill., to Miss Angela Piszczek of Peru, Ill., June 2.

Lyston D. Howe, M. D., Streator, Ill., to Miss Lillian Monroe of Joliet, Ill., in Chicago, June 16.

Ira Elmer Hoffman, M. D., Chicago, to Miss Florence Emilie Demaree of Madison, Ind., June 14.

Harry Mortimer Richter, M. D., to Miss Adelyn Ruth Windmuller, both of Chicago, June 23.

Deaths

Isaac H. Kelly, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1880; died at his home in Stone Fort, Ill., May 27.

Elmer Elwood Hall, M. D. Chicago College of Medicine and Surgery, 1903; aged 50; died at his home in Chicago June 21, from tuberculosis.

George A. Hibbert, M. D. College of Physicians and Surgeons, Chicago, 1893; died at his home in Chicago, May 15, from angina pectoris, aged 48.

John Franklin Holt, M. D. Rush Medical College, 1884; of Assumption, Ill.; died at St. Mary's Hospital, Decatur, May 17, from diabetes, aged 75.

A. S. Childs, M. D. Hahnemann Medical College, Chicago, 1878; of Chicago and Wilmette, Ill.; died at his home in Wilmette about June 21.

J. Elizabeth Tompkins, M. D. Harvey Medical College, Chicago, 1896; for twenty-five years a practitioner; died at her home in Chicago, May 26, aged 70.

Dudley, O. Wedge, M. D. Jefferson Medical College, 1874; formerly of Ipava, Ill.; but since 1908 a resident of Chicago; died at the home of his daughter in that city, May 11.

James Edward Rankin, M. D. Keokuk (Iowa) Medical College, 1891; of Watertown, Ill.; died in the Watertown State Hospital, June 6, from an overdose of an opiate, aged 47.

Thaddeus F. Hamer, M. D. University of Marburg, Germany, 1884; aged 70; for many years a practitioner and druggist of Lincoln, Ill., but since 1912 a resident of Los Angeles; died at his home in that city, June 24.

Frantz Josef Meyer, M. D. Missouri Medical College, St. Louis, 1887; a member of the Illinois State Medical Society; died at his home

in Evansville, Ill., about May 10, from carcinoma of the inferior maxilla, aged 59.

FRANKLIN ELLIS KELLY, M. D. Louisville Medical College, 1895; a member of the Illinois State Medical Society; also a druggist; died at his home in Green Valley, Ill., April 29, aged 59.

HUGH THOMAS D'ARCY, M. D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1897; for several years a practitioner of Bloomington, Ill.; died at his home in Chicago, May 13, from sciatic rheumatism.

SAMUEL COLE, M. D. Rush Medical College, 1865; New York University, New York City, 1866; a Fellow of the American Medical Association; died at his home in Chicago, June 5, from heart disease, aged 70.

CLAYTON M. STEWART, M. D. Missouri Medical College, St. Louis, 1857; Jefferson Medical College, 1860; for many years a practitioner of Scott County, Ill.; died at his home in Jacksonville, Ill., April 30, aged 83.

JOHN WERTON HAMPTON, M. D. Rush Medical College, 1912; of Norway, Mich.; physician for the Loretto (Mich.) Mining Company; died in St. Joseph's Hospital, Chicago, June 3, from lymphatic leukemia, aged 26.

KARL A. NORDERLING, M. D. College of Physicians and Surgeons, Chicago, 1887; formerly of Chicago, but since 1908 a resident of Paxton, Ill.; died at his home in that city, June 9, after a long illness, aged 58.

EMIL KUNZ, (license, Illinois, 1891), a practitioner since 1877; a member of the German Medical Society of Chicago and a well-known anatomic draughtsman; died at his home in Chicago, May 25, from cerebral hemorrhage, aged 66.

CHARLES WILLIAM PRENTISS, M. A. Middletown, 1896; Ph. D., Harvard University, 1900; aged 40; professor of microscopic anatomy in Northwestern University Medical School, Chicago; died in Wesley Hospital, Chicago, June 12.

JAMES PERRY WALTERS, M. D. Miami Medical College, Cincinnati, 1876; formerly a member of the Illinois State Medical Society and secretary of the Wayne County Medical Society; a veteran of the Civil War; died at his home in Fairfield, Ill., May 9, aged 66.

FRANKLIN J. CLAY GRIFFITH, M. D. Cincinnati College of Medicine and Surgery, 1874; died at his home in Annapolis, Ill., May 27, aged 71.

JOHN BLAIR GUTHRIE, M. D. University of Toronto, 1889; an advertising specialist of Illinois; died at his home in Evanston, Ill., June 5, from tuberculosis, aged 45.

PETER EDWIN TOVEY, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; aged 60; a member of the Illinois State Medical Society; supreme medical examiner of the order of the Magi; died at his home in Galesburg, June 23, from angina pectoris.

REUBEN WILLIS BOWER, M. D. Northwestern University Medical School, 1870; a member of the Illinois State Medical Society; a veteran of the Civil war, in which he served in the hospital corps; for more than forty years a practitioner of Sheridan, Ill.; died at his home June 10, from cerebral hemorrhage, aged 76.

ALBERT S. CORE, M. D. Rush Medical College, 1879; a Fellow of the American Medical Association and a specialist on diseases of the eye, ear, nose and throat; formerly of Du Quoin, Ill., and Chicago, but for the last seven weeks a practitioner of Mendota, Ill.; died in his office in that city June 16, from cerebral hemorrhage, aged 65.

JOHN W. COLEMAN, M. D. Miami Medical College, Cincinnati, 1856; Medical College of Ohio, Cincinnati, 1858; assistant surgeon of the Forty-First Illinois Volunteer Infantry throughout the Civil war; for more than half a century a practitioner of Monticello, Ill., and first superintendent of schools of Piatt County; died at his home in Decatur, Ill., June 8, aged 84.

HERBERT S. SPERRY, M. D. College of Physicians and Surgeons, Keokuk, Ia., aged 47; a member of the Illinois State Medical Society; a practitioner and pharmacist of Hull, Ill., and also manager of the Electric Light Plant of Hull; was accidentally electrocuted June 21, by coming in contact with an electric wire of high voltage while attempting to make repairs.

JAMES FULTON MCCUTCHAN, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1868; a member of the Illinois State Medical Society and president of the Warren County Medical Society; a veteran of the Civil War, and

one of the oldest practitioners of Warren County, died suddenly at his home in Alexis, Ill., May 28, aged 81.

WILLIAM DOUGALL, M. D. Northwestern University Medical School, Chicago, 1868; a Fellow of the American Medical Association; once president and later secretary of the Will County (Ill.) Medical Society; president of the Illinois Pure Aluminum Company, Lemont, and for a time chief surgeon of the Illinois and Michigan Canal; from 1879 to 1883, postmaster of Joliet; a veteran of the Civil War; died at his home in Joliet, May 18, from heart disease, aged 73.

HENRY BAK, M. D., University of Vienna, Austria, 1872; formerly a surgeon in the Austro-Hungarian army and later a surgeon of volunteers during the Spanish-American War; president of the faculty and professor of practice of medicine and pediatrics in the Southern College of Medicine and Surgery, Atlanta, Ga.; for several years a practitioner of Chicago; died in the Michael Reese Hospital in that city, May 25, from carcinoma of the bladder, aged 68.

NEW AND NON-OFFICIAL REMEDIES.

During May the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-Official Remedies:

Hoffman-LaRoche Chemical Works: Papaverine Hydrochloride, Roche; Papaverine Hydrochloride, Roche, Tablets; Papaverine Sulphate, Roche, Ampules.

Hynson, Westcott & Co.: Ouabain Ampules, H., W. & Co.

Merck & Co.: Papaverine Hydrochloride, Merck.

Since publication of New and Non-Official Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies":

Standard Radium Solution for Bathing: A 5.2 per cent barium chloride solution containing radium chloride equivalent to 4.2 micrograms of radium per bottle. For "Actions and Uses" see the article on radium in New and Non-Official Remedies. The barium in the solution is said to have no effect. The contents of a bottle, containing 4.2 microcuries, or 10,000 Mache units, are used for a bath. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Solution for Drinking: A solution of 2 micrograms of radium and 1.3 mg. barium chloride per bottle of 60 c. c. For "Actions and Uses" see the article on radium in New and Non-Official Remedies. In view of the small barium content it is claimed that the physiologic action of barium may be ignored. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Earth: A mixture consisting chiefly of silica and small quantities of carnotite, 450 gm. containing 0.45 micrograms of radium in the form of radium sulphate. For "Actions and Uses" see the article on radium in New and Non-Official Remedies. For use the earth is mixed with water and heated for a time. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Compress: A compress containing 225 gm. of a mixture consisting chiefly of silica and barium sulphate containing radium sulphate equivalent to 15 micrograms of radium. For "Actions and Uses" see the article in New and Non-Official Remedies on radium. Being applied wet, it is claimed that the action is partly due to beta and gamma radiation of the radium salt and partly to the radium emanation which is dissolved out by the water. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Papaverine: An alkaloid obtained from opium, but not chemically related to morphine. Its use has been proposed in various atonic conditions of the smooth muscles, particularly in gastric and intestinal spasms, for the diagnosis of pyloric spasm, biliary colic and in bronchial spasm. It is a feeble analgesic and local anesthetic. Neither tolerance nor habituation from its use has been reported. It is used in the form of its salts (see below).

Papaverine Hydrochoride: This contains not less than 88 per cent of papaverine. Papaverine hydrochloride is odorless, bitter and permanent in the air. It is sparingly soluble in water; soluble in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

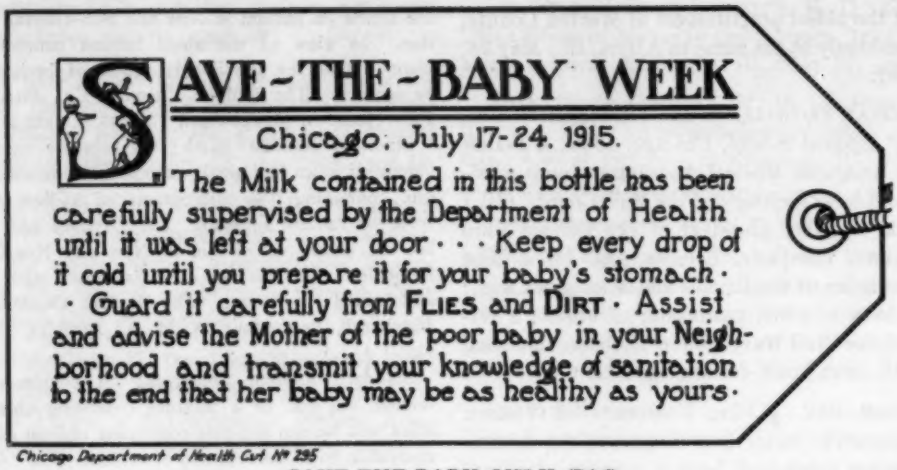
Papaverine Hydrochloride, Merck: Merck & Co., New York.

Papaverine Hydrochloride, Roche: Hoffmann-LaRoche Chemical Works, New York.

Papaverine Hydrochloride, Roche, Tablets: Each tablet contains papaverine hydrochloride 0.04 gm. Hoffmann-LaRoche Chemical Works, New York. (Jour. A. M. A., May 29, 1915, p. 1849.)

Papaverine Sulphate: This contains not less than 85 per cent of papaverine. Papaverine sulphate is odorless, bitter and slightly hygroscopic. It is soluble in water and in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

Papaverine Sulphate, Roche, Ampules: Each ampule contains 0.04 gm. papaverine sulphate. Hoffmann-LaRoche Chemical Works, New York. (Jour. A. M. A., May 29, 1915, p. 1849.)


SAVE-THE-BABY WEEK
Chicago, July 17-24, 1915.
The Milk contained in this bottle has been carefully supervised by the Department of Health until it was left at your door · · · Keep every drop of it cold until you prepare it for your baby's stomach · · Guard it carefully from FLIES and DIRT · Assist and advise the Mother of the poor baby in your Neighborhood and transmit your knowledge of sanitation to the end that her baby may be as healthy as yours ·
Chicago Department of Health Cut № 295

SAVE-THE-BABY MILK TAG.

This is a reproduction of the tag placed on 500,000 bottles of milk delivered to the homes in Chicago on July 21st and 22nd. If these tags did no more than call the attention of the mothers of Chicago to the need of helping Chicago's babies, they have been worth many times their cost.

"KIDLETS"—Continued.

The stork and the fly are deadly enemies.

If babies are worth while, they should have all they are worth.

Remember that the baby is the helpless member of the family. It cannot speak for itself. It needs the best of care and attention all the time.

—*From The Health Bulletin.*

CHICAGO A HEALTHY CITY.

A comparison of the death rates from principal causes in the nine American cities having populations over 500,000 for the past two years shows that the typhoid death rate has been materially reduced in Chicago, Philadelphia, St. Louis, Cleveland and Detroit; the Chicago rate having dropped from 10.5 to 6.9 per 100,000 population, or over 34 per cent, giving this city the lowest rate recorded by any large city except New York. The Chicago rates also showed decreases in diphtheria, scarlet fever, pneumonia, and diarrheal diseases. The Boston pneumonia rate was reduced. In Cleveland and Detroit the rates were reduced in all the diseases listed, except tuberculosis.

The percentage of deaths under one year of age did not change materially in any city, St. Louis remaining the lowest and Detroit highest.

The St. Louis rate for pneumonia was reduced, but increases are noted in the rates for diphtheria, scarlet fever, tuberculosis and diarrheal diseases, though the rate for diarrheal disease deaths remained far below that of any other city.

Such a phenomenally low death rate from diarrheal diseases as that of St. Louis in 1913, viz., 17.3 per 100,000, invites analysis. On checking the deaths reported, 125, with the U. S. census report for the same year, it will be noted that the census classified 525 deaths in St. Louis from diarrheal diseases under two years of age. The U. S. census rate for St. Louis would, therefore, be 72.5 per 100,000 population, a rate slightly in excess of the New York rate in 1913. These figures show a radical difference in the classification of deaths.—*From Bulletin, Chicago Department of Health.*

Book Notices

ALVEOLODENTAL PYORRHEA. By Charles C. Bass, M. D., Professor of Experimental Medicine, and Foster M. Johns, M. D., Instructor in the Laboratories of Clinical Medicine at the Tulane University Medical College, New Orleans, La. Octavo volume of 167 pages, with 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

The author gives in this volume quite an exhaustive treatise of pyorrhea. It is true that dentists treat nearly all cases of pyorrhea, or nearly all cases are left untreated. It is equally true that physicians pay too little attention to the teeth of their patients. Bad teeth or suppurating alveoli cause many cases of infection in other anatomical parts. The author treats

this disease in a scientific way, and incidentally upsets most of our accepted ideas of the care and treatment of teeth. We recommend that both doctors and dentists read this book, and we would call especial attention to the chapter on prophylaxis.

THE MEDICAL CLINICS OF CHICAGO. July, 1915. Volume I No. 1. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price per year, paper, $8.00, cloth, $12.00.

The W. B. Saunders Company have issued the first volume of the Medical Clinics of Chicago. The clinics are those of teachers of internal medicine. The clinics of this issue, together with the subject of each, are as follows:

Clinic of Dr. Charles L. Mix,
Lung Abscess with the Picture of Tuberculosis.
A Lesion of the Cauda Equina.
Clinic of Dr. Charles Spencer Williamson,
Nephritis.
Case of Hepatic Abscess.
Gout.
Clinic of Dr. Isaac A. Abt,
Infantile Tuberculosis.
Sarcoma of Kidney in a Child Eighteen Months Old.
Clinic of Dr. Robert B. Preble,
Chronic Lymphatic Leukemia.
Renal and Cardiac Insufficiency.
Clinic of Dr. Maurice L. Goodkind,
Pneumonia.
Tabes.
Cholelithiasis.
Foreign Body in the Bronchus Six Months.
Clinic of Dr. Frederick Tice,
Syphilitic Aoritis.
Hour-Glass Stomach.
Clinic of Dr. Walter Hamburger,
Congenital Pulmonary Stenosis.
Aneurysm of the Arch of the Aorta.
Clinic of Dr. Ralph C. Hamill,
Syphilis of the Central Nervous System.

These clinics will be of great value to medical literature, if the high standard is maintained.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume IV, No. 3. (June, 1915.) Octavo of 195 pages, 73 illustrations. Philadelphia and London. W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year. Paper, $8.00. Cloth, $12.00.

This number of Murphy's Clinics contains an extensive talk on the diagnosis of injuries of the carpers, illustrated with numerous x-ray pictures. Illustrations of methods of testing these injuries are also included, and are very good. A talk on appendicitis giving the excessive high mortality as a reason is timely. Dr. William J. Mayo is represented by a clinical talk on unsuccessful gastro-interostomy for ulcer, giving an analysis of its causes. The balance of this number is not overshadowed by the above articles, and included articles on friction burns, tumor of testicle, painful heel, tuberculosis of cord and epididymitis, tenovaginitis, myeloid sarcoma and hypernephroma.

SIMPLIFIED INFANT FEEDING, WITH SEVENTY-FIVE ILLUSTRATIVE CASES. By Roger H. Dennett, S. B., M. D. Adjunct Professor of Diseases of Children; New York Post-Graduate Medical School; Attending Physician of the Childrens Department, New York Post-Graduate Hospital; Assistant Attending Physician at the Willard Parker Hospital and the Red Cross Hospital, New York. With 14 illustrations. Philadelphia and London. J. B. Lippincott Company. Price, $3.00.

An interesting work on simplified infant feeding following a certain set of methods or systems, which according to the author have been extensively tried out, and which have produced excellent results. He describes in detail just how to feed an infant, giving his methods in an easily comprehensible manner. The book should be of great assistance to those who have difficulty in prescribing diet for infants. The chapters devoted to the treatment of diarrhoea constipation, vomiting, in bottle-fed babies are exceptionally good.

THE TREATMENT OF FRACTURES. With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M. D., Surgeon to the Massachusetts General Hospital; Associate in Surgery at the Harvard Medical School. Eighth Edition, Revised and Enlarged. Octavo volume of 734 pages, with 1,057 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Polished Buckram, $6.00 net; Half Morocco, $7.50 net.

A comparison with the last edition of Scudder shows numerous changes and additions which have greatly enhanced the value of the present edition. The illustrations have been greatly added to, likewise the methods of treatment that have been proven satisfactory. The articles on fracture of the jaws, the acetabulum, the greater tuberosity of the humerus and the separation of the lower epiphysis of the femur have had much new material added. A timely warning against operative treatment is given, where definite indications are not present. It can be recommended as being the last word in fractures. The printing and illustrations are excellent.

MODERN ASPECTS OF THE CIRCULATION IN HEALTH AND DISEASE. By Carl J. Wiggers, M. D., Assistant Professor of Physiology in Cornell University Medical College. Octavo, 378 pages, illustrated with 104 engravings. Cloth, $3.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This excellent and timely volume contains, in a convenient form, many of the investigations of Professor Wiggers on the circulation. A great deal of it has not heretofore been published, and increases our knowledge of the circulation considerably. The book is divided into three sections, section one being devoted to the physiology of the circulation, section two, graphic methods for the clinician, section three, disease of circulation. Section two contains practically all the methods for the complete study of the heart and pulses, and is graphically presented. It is a book that should prove valuable to the physician who is especially interested in the circulation.

The illustrations are numerous, well made and

clearly explained. The mechanical features of the book are excellent.

DIARRHOEAL, INFLAMMATORY, OBSTRUCTIVE AND PARASITIC DISEASES OF THE GASTRO-INTESTINAL TRACT. By Samuel G. Gant, M. D., LL.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus at the New York Post-Graduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net; Half Morocco, $7.50 net.

A perusal of this apparently large volume on the treatment of diarrhoea, which with many is bismuth, explains the reason why many cases of diarrhoea are really not treated. The author has presented his subject in a most interesting style, and has endeavored to free his book of useless matter, and easily comprehensible. Technical terms, confusing nomenclature, profuse histological data, complicated laboratory methods, prolonged discussions, statistics and obsolete views have been wisely omitted. Exceptionally good are the chapters on examination and diagnosis, on the parasitic causes of diarrhoea and the irrigating and surgical treatment. A useful formulary is included. The book carries the stamp of a great amount of personal work by the author, and should be a great aid to the practitioners in the treatment of this oftimes troublesome and more times mistreated condition, containing as it does all the possible causes of diarrhoea and its methods of successful treatment.

THE TREATMENT OF GONORRHEA AND ITS COMPLICATIONS IN MEN AND WOMEN. For the General Practitioner. By William J. Robinson, M. D. Chief of the Department of Genito-Urinary Diseases and Dermatology, Bronx Hospital and Dispensary; Editor the American Journal of Urology, Venereal and Sexual Diseases; Editor of the Critic and Guide; Author of Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women; Sexual Problems of Today; Never Told Tales; Practical Eugenics, etc. President of the American Society of Medical Sociology, Ex-President of the Berlin Anglo-American Medical Society, Fellow of the New York Academy of Medicine; Member of American Medical Editors' Association, American Medical Association, New York State Medical Society, International Gesellschaft fur Sexualforschung, American Urological Association, etc., etc. Price, $2.50. 1915. Critic and Guide Company, 12 Mt. Morris Park West, New York.

We are pleased to read a book written by a specialist, which does not emphasize the opinion that the only person competent to treat a particular disease is the specialist.

Dr. Robinson has written a book aimed to be of benefit to the general practitioner, and with the idea that the general practitioner may have ability sufficient to properly treat a patient suffering from a disease in which the doctor specializes.

The volume is not a collection of opinion from other text books, but hands down first-hand the author's opinions and results of treatment, as used by him.

The author discusses the many complications which may arise in this disease in either sex, and the conditions from which they come, giving his method of treatment. The doctor also gives much attention to treatment, frequently given, but which in his opinion, should not be used.

The book is written in a plain, easily readable language and gives attention to the minute detail of treatment, which is so necessary in treatment of any disease, but which is so often neglected. We are pleased to recommend the book to our readers.

APPLIED IMMUNOLOGY. The Practical Application of Sera and Bacterins, Prophylactically, Diagnostically and Therapeutically With an Appendix on Serum Treatment of Hemorrhage, Organotherapy. By B. A. Thomas, A. M., M. D., Professor of Genito-Urinary Surgery in Polyclinic Hospital and College for Graduates in Medicine; Instructor in Surgery in the University of Pennsylvania; Associate in the William Pepper Laboratory of Clinical Medicine. And R. H. Ivy, M. D., D. D. S., Assistant Instructor in Surgery in the University of Pennsylvania; Instructor in Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, Philadelphia. Five Colored Inserts and 68 Illustrations in Text. Philadelphia and London. J. B. Lippincott Company. Price, $4.00.

The most practical work on immunology we have seen. The book is written principally for the student and practitioner, and gives in a concise manner the present day knowledge and practical appliance of that knowledge of immunization.

It has avoided much of the experimental and theoretical, which has served to confuse the student of Serology. The book gives in detail the practical phases of Serum and Bacterin applications in medicine, and will be of most value to those physicians who are using sera and vaccines, yet have not the time to delve deeply into the scientific production of them.

OPERATIVE GYNECOLOGY. By Harry Sturgeon Crossen, M. D., F. A. C. S., Associate in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital; Gynecologist to St. Luke's Hospital, Missouri Baptist Sanitarium and St. Louis Mullanphy Hospital; Fellow of the American Gynecological Society, and of the American Association of Obstetricians and Gynecologists. Seven Hundred and Seventy Illustrations. St. Louis. C. V. Mosby Company. 1915. Price, $7.50.

Just from the press of the C. V. Mosby Company comes this new work on Operative Gynecology. The author has limited the text to strictly operative procedures on the female genital tract, excluding all operations on adjacent organs. Dr. Crossen emphasizes the fact that one particular method of operation will not be successful in all cases, that an operator should choose the particular method for each individual case. Selective treatment is the keynote of the work. He describes and illustrates in detail a number of his favorite methods for each operation. The text is clear, concise, and easily readable. One must compliment the author on the very excellent illustrations.

The book is one which will prove of immense value to the younger operators, and should be read by those operators who persistently adhere to one particular operation for the same disease in all patients. We recommend the work to our readers.